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ABSTRACT

This issue of a research journal on gifted education explores different perspectives on tracking in schools, the difference between equity and equality, whether equity is the enemy of excellence, and how all can be treated equally if some people are more intelligent than others. Specific articles include: (1) "Inequity in Equity: How 'Equity' Can Lead to Inequity for High-Potential Students" (Camilla Persson Benbow and Julian C. Stanley), which discusses the dumbing-down of curriculum, equating aptitude and achievement testing with elitism, and provides recommendations for creating positive change; (2) "Detracking America's Schools: The Reform without Cost?" (Dominic J. Brewer, Daniel I. Rees, and Laura M. Argys), which explores the costs of detracking in terms of student performance; (3) "Detracking and Its Detractors: Flawed Evidence, Flawed Values" (Robert E. Slavin), which argues against ability grouping; (4) "The Reform without Cost? A Reply to Our Critics" (Dominic J. Brewer, Daniel I. Rees, and Laura M. Argys); (5) "Special Classes for Gifted Students? Absolutely!" (Sally Burton-Szabo); (6) "Untracking and Students' Futures: Closing the Gap between Aspirations and Expectations" (Renee Smith-Maddox and Anne Wheelock); and (7) "Promoting Gifted Behavior in an Untracked Middle School Setting" (Thomas O. Erb, Stephen O. Gibson, and Suzanne E. Aubin). (Articles include references.) (CR)

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Spring 1998

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Editor's Preface

What's the difference between equity and equality? Is equity the enemy of excellence? If some people are more intelligent than others, how can all people be treated equally? And why should we care?

These are more than just questions of abstract philosophy; these are the questions, and their answers, that determine the basis of much that goes on in our classrooms today. And why should we care? For some of us, the answers impact on our own children and on their friends and classmates. For all of us, the answers impact on the future leaders of business, education, government and the arts—the future leaders of us!

The authors in this issue explore these concepts and their practical application, tracking. There are several sides to this debate, and we have tried to present examples of different viewpoints. The more I examined the issues of tracking, detracking and untracking, the more I became convinced that more points of view exist than could possibly fit into this volume, and that, as the philosopher said in another context, there are no answers, only questions.

As always, the *Mensa Research Journal* gives you food for thought—*bon appetit!*

Phyllis Miller
Editor

Inequity In Equity: How "Equity" Can Lead to Inequity for High-Potential Students

Camilla Persson Benbow, Iowa State University
and Julian C. Stanley, Johns Hopkins University

Over the past three decades, the achievement of waves of American students with high intellectual potential has declined as a result of inequity in educational treatment. This inequity is the result of an extreme form of egalitarianism within American society and schools, which involves the pitting of equity against excellence rather than promoting both equity and excellence, anti-intellectualism, the "dumbing-down" of the curriculum, equating aptitude and achievement testing with elitism, the attraction to fads by schools, and the insistence of schools to teach all students from the same curriculum at the same level. In this article we provide recommendations for creating positive change—recommendations that emphasize excellence for all, that call for responsiveness to individual differences, and that suggest basing educational policies on well-grounded research findings in psychology and education. Educational policies that fail to take into account the vast range of individual differences among students—as do many that are currently in use—are doomed to be ineffective.

Much has been said about the relative standing of American students in international comparisons of mathematical and scientific achievement. Such comparisons—regardless of who conducted the survey, the instruments used, and the age of individuals studied—repeatedly have shown that students in the United States typically rank toward the bottom of industrialized nations in the range of achievement reported (Barton, 1990, 1993; Elam, 1993; Husen, 1967a; IEA, 1995; LaPointe, Mead, & Askew, 1992; McKnight et al., 1987; Medrich & Griffith, 1992; National Center for Educational Statistics, 1992; Romer, 1991; Travers, Garden, & Rosier, 1989). Such findings have been well publicized in both the popular media and in scientific outlets, indicting the American educational system in the process (Berliner & Biddle, 1995) because cross-cultural differences in achievement vary directly with cross-cultural differences in curricula (Geary, 1995; Geary, Salthouse, Chen, & Fan, 1996; Husen, 1967a, 1967b). Berliner and Biddle (1995) and Bracey (1991, 1996), among others, have challenged these assertions, however, and have shown convincingly (as did Herrnstein & Murray, 1994) that the achievement of average-ability students has actually remained steady, and even improved for minorities, over the past three

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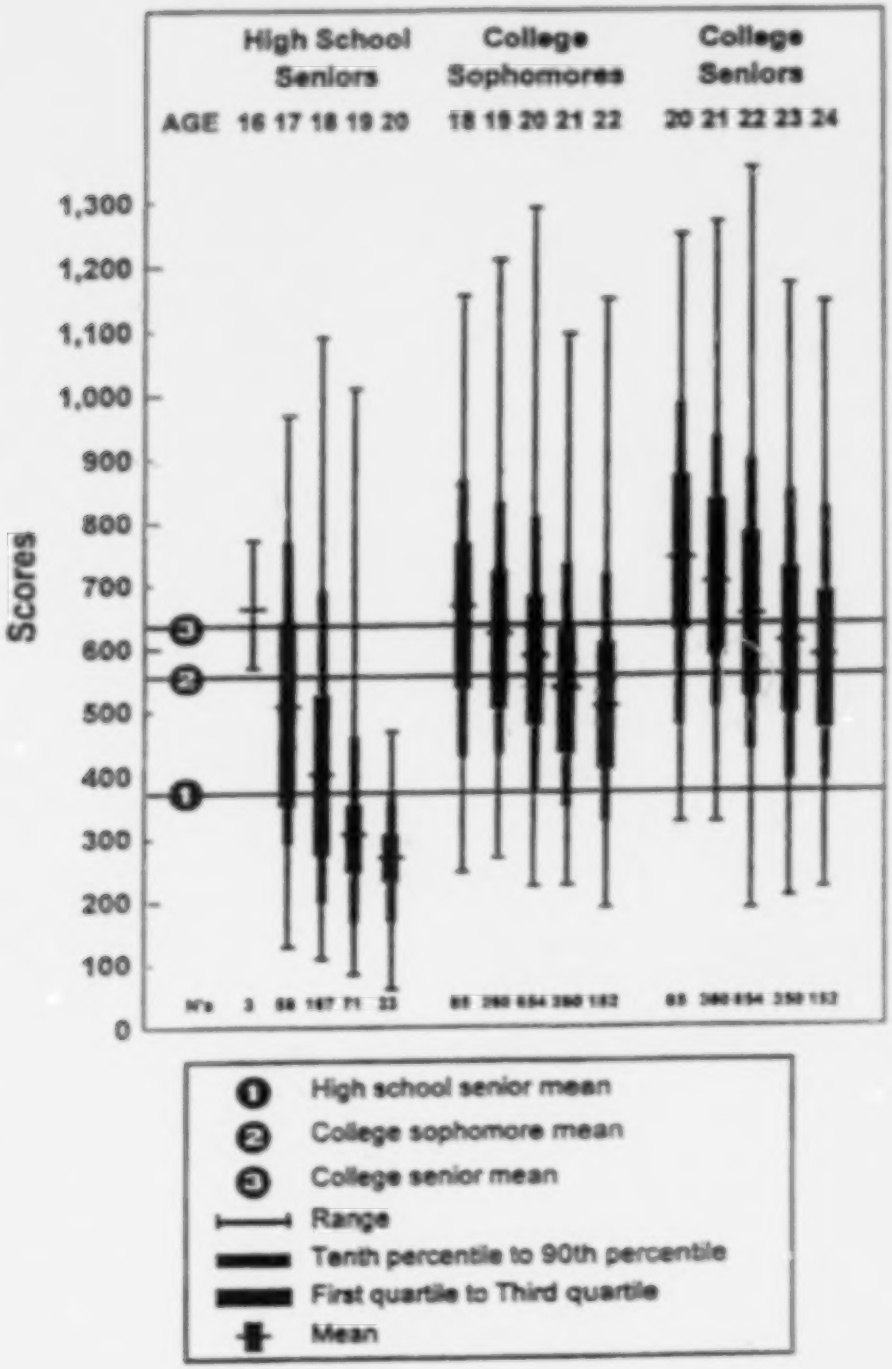
decades. These authors have asserted that the claim that American public schooling is failing is a manufactured crisis; rather, they have argued, public education should receive high marks because its performance borders on the miraculous at times. As we see it, the truth probably lies somewhere in between (Koretz, 1992).

Nonetheless, often ignored in the debate about the success of American public education is the relatively poor performance of America's students (Archambault et al., 1992, 1993; Westberg, Archambault, Dobyns, & Salvin, 1992). The achievement of the most able U.S. students lags behind that of their counterparts in other industrialized nations and is well below both the level of their own potential and the achievement levels of previous U.S. generations. It is their achievement that can provide substance to the following controversial conclusion in *A Nation at Risk* (National Commission on Excellence in Education, 1983): "Each generation of Americans has outstripped its parents in education, in literacy, and in economic attainment. For the first time in the history of our country, the educational skills of one generation will not surpass, will not equal, will not even approach, those of their parents" (also see Mullis, Owen, & Phillips, 1990). Our nation's brightest youngsters, those most likely to be headed for selective colleges, have suffered dramatic setbacks over the past two decades. This has grave implications for our country's ability to compete economically with other industrialized nations (Bishop, 1989; Boissiere, Knight, & Sabot, 1985; Rivera-Batiz, 1992; Singal, 1991).

To some, these assertions may appear confusing, because bright students appear to be performing well if we look at standard performance evaluations. This is because the evaluation criteria schools employ are too shallow for use with highly able students. In psychometric terms, most assessment instruments used have "low ceilings"—in other words, not enough "top" to capture the scope of these students' capabilities. Tests are much too easy for them, such that the whole group scores at or near the top of the scale, and the observer cannot discriminate between exceptional and truly profound achievement within intellectually precocious samples (cf. Achter, Lubinski, & Benbow, 1996). Nor are many aware of the remarkable width of the range of individual differences within an age group. For example, among ninth- through 12th-grade high school students, the range of achievement in various academic subjects is genuinely phenomenal. Figure 1 (from Learned & Wood, 1938) illustrates this point, and figures like it can be found in the psychological literature (for every decade) for the past 70 years. A close examination of this figure reveals that younger students in the same grade tended to have more knowledge about key academic topics than older students in the same grade. Moreover, approximately 10% of twelfth-grade students under 18 years of age had more scientific knowledge than the average college senior!

Figure 1.
Overlapping of total score distributions of high school senior, college sophomore, and senior men on an extensive battery of cognitive tests [adapted from Learned & Wood (1938), p. 278].



Bright students can achieve well not only in subjects at their grade placement but also at much higher levels. For example, 13-year-old students in the top 1% in abilities relevant to academic excellence (e.g., mathematical, spatial, or verbal reasoning) can assimilate and retain a full school year of high school biology, chemistry, Latin, physics, or math in three intensive weeks of schooling (e.g., Lynch, 1992, Stanley & Stanley, 1986). They also can master a full semester of first-year college-level English, logic, computer science, psychology, and so on in the same amount of time. They do this routinely in summer programs for talented students at Iowa State University and at similar programs across the country and have done so for almost 25 years (Stanley, 1973). Most enjoy the experience (Benbow, Lubinski, & Suchy, 1996). We feel that the extent to which readers find this surprising reflects the degree to which our schools lack challenge for the precocious, as the great Harvard personologist Gordon Allport (1960) depicted in his commentary on higher education:

> *It is my own conviction that most of our institutions of higher learning offer intellectual fare distressingly below the digestive capacity of the gifted. I am not thinking merely of colleges that offer the frivolous course in fudge-making, but of our "best" institutions, where courses are often repetitive, routine, and devoid of challenge. Perhaps from the point of view of the average student they are adequate, but they stretch no nerve in the gifted student....Usually such a student does well, and the teacher rejoices, but in many cases the teacher should feel less joy than guilt, for he has, intentionally, beckoned the gifted student downward toward mediocrity rather than upward toward maximum self-development. (p. 68)*

We shall document the downward decline of American students with high intellectual potential and discuss the forces in U.S. society, in particular in its educational system, that can provide a partial explanation. We shall argue that these forces, broadly categorized as parts of an extreme form of egalitarianism, involve the pitting of equity against excellence rather than promoting both equity and excellence in schools; anti-intellectualism in American society as well as within schools; the "dumbing-down" of the curriculum; equating aptitude and achievement testing with elitism; the attraction to fads (or novelty) by schools; and the inflexibility of the age-in-grade, lock-step educational system (i.e., the determination of many educators to use the same curriculum at the same pace with all students). Extreme egalitarianism has led to a situation in which many of the brightest students, especially bright minority students, are being treated inequitably because they are not provided with an appropriate education. As Dr. Gregory Anrig, former president of the Educational Testing Service,

asserted, American schools have devoted so much energy to bringing up the bottom that they have failed to challenge students at the top ("Top Students," 1991). As a consequence, intellectually advanced students are being deprived of opportunities to develop their potential. Indeed, John Gardner (1984, p. 34) noted that, "to the extent that we move toward excesses of equalitarianism, we may learn our lessons only at the hands of more vigorous outsiders." We believe that Americans are now witnessing the consequences of that lesson.

We shall conclude with recommendations for creating positive change, change that may restore a better balance between America's two strivings: educational equity and excellence (Gardner, 1961, 1994). It is interesting to note that improving the education that intellectually capable students receive does not necessitate large increased expenditures by schools and, hence, is not at the cost of any other group of students. The main requirement is administrative flexibility. Yet, even if there were a price-tag, would it not be a fair proposition to suggest that at least 10% of the funding that currently goes toward special education be ear-marked for the special needs of precocious students (Belin, 1995), rather than the current low level of 2 cents out of every $100 spent in education (Brimelow, 1994; Sykes, 1995)?

The Decline at the Top

In contrast to widely held beliefs, Americans with average or even below-average abilities are today probably better prepared academically than ever before (Berliner & Biddle, 1995; Bracey, 1996; Herrnstein & Murray, 1994). Yet the reverse is true for the most intellectually able. It is well known that the achievement of all students suffered a major decline in the 1960s (Bishop, 1989; Koretz, 1986, 1992). Although the performance of other groups of students eventually recovered and has continued to improve, this rebound has never materialized for students with the greatest cognitive capabilities (Herrnstein & Murray, 1994; Singal, 1991). In this section we provide substantiating data, much of which were summarized by Herrnstein and Murray (1994) and Berliner and Biddle (1995), to support these assertions.

Average-Ability Students

Let us first consider the College Board Scholastic Aptitude Test (SAT) (Donlon, 1984). The SAT was designed for above-average ability, college-bound students who take the test of their own volition. Most findings from the SAT, therefore, are based on this group. Nonetheless, national norms for representative samples of U.S. students are available for various times. Inspection of these normative data reveals that there was essentially no decline in SAT scores between 1955 and 1983 for American

students as a whole. In 1955 the mean verbal score was 348, whereas the mean math score was 417. In 1960, just before the decline began in SAT math and verbal scores for college-bound students, the verbal score for a random sample of American 11th-grade students was 374 and the math score 410. In 1983 the scores were 376 for verbal and 411 for math.

Results from the National Assessment of Educational Progress (NAEP), which began in 1969 and is designed to obtain data on a nationally representative sample of students, reveal a similar pattern. Earliest achievement test scores in reading, science, and math are quite similar to those obtained in 1990. If anything, scores rose rather than declined during this period (Berliner & Biddle, 1995, pp. 27-28; Carson, Huelskamp, & Woodall, 1991; Educational Testing Service, 1990; Herrnstein & Murray, 1994, p. 422; National Center for Educational Statistics, 1991). The Iowa Test of Educational Development (IT ED) has been administered to nearly all of Iowa students for almost 50 years. This largely White and rural population of students has revealed the following trends: an increase in performance from the early 1940s to the mid-1960s, followed by a sharp drop between 1966 and 1978, and then a rebound and steady improvement through to the present. The increase in performance between 1942 and 1992 approached a full standard deviation (Herrnstein & Murray, 1994).

Rudman (as quoted in Singal, 1991), a co-author of the Stanford Achievement Test, has noted that between 1920 and the late 1960s American children taking the test exhibited marked gains in achievement levels. Indeed, these gains were so great that revisions were necessary, each decade to make the test more difficult. Then, from the late 1960s to early 1980s, almost all the gains from the previous three decades were washed away. In the past 10 years, there has been another cycle of improvement; but this is not the full story. The most telling findings emerged when the sample taking the Stanford Achievement Test was split into groups according to ability. Students in the bottom quartile showed steady improvement since the 1960s, whereas the top quartile declined. "The highest cohort of achievers" demonstrated "the greatest declines across a variety of subjects as well as across age-level groups" (Rudman as quoted in Singal, 1991, p. 60).

Linn, Graue, and Sanders (1990) provided further data supporting Rudman's claim. They inspected scores over time on the most widely used commercial tests of achievement (e.g., the Iowa Test of Basic Skills—ITBS; and the California Achievement Test—CAT). Each year students posted higher scores on both reading and mathematics on all of these commercial tests. For the CAT, the average annual gain in percentile rank was 2.10 for reading and 2.04 for math. Moreover, in 1986 Hieronymus and Hoover claimed that composite achievement on the ITBS was at an all-time high in nearly all test areas. Hoover was quoted in Bracey (1996) for making similar claims for the 1990 data.

Project Talent, a monumental study of high school students begun in 1960 (Flanagan et al., 1962), readministered its reading comprehension test to a nationally representative sample of 11th-grade students in 1970. Again, gains over the previous decade were posted for this cross-section of America. It is ironic that this occurred during the time when the SAT registered its largest declines among college-bound students (Herrnstein & Murray, 1994, pp. 423-424). In the 1980s, data amassed by the Congressional Budget Office (1986) for Virginia, New York, Texas, and California also showed this pattern.

Finally, average scores of Americans on the Wechsler and Stanford-Binet intelligence tests have been increasing (Flynn, 1987). Increases in intelligence (i.e., the Flynn effect) have been posted for every decade since 1932, similar to what is found for achievement—a converging line of evidence that, in general, the United States has not been deteriorating intellectually.

We conclude that the performance of American students as a whole has demonstrated steady improvement since the 1920s. This conclusion does not fit well with the picture painted in the popular media of a nation at risk, however (Berliner, 1993; Berliner & Biddle, 1995; Bracey, 1991).

Academically Capable and Talented Students

The picture of academically capable and talented students is quite different; these students' performances are the cause for concern. We begin with the well-publicized score declines on the SAT among college-bound high school students. The decline began in 1963, and scores continued to decrease steeply until 1980 (Koretz, 1986). The drop was almost a half standard deviation on SAT-V and almost a third on SAT-M (Herrnstein & Murray, 1994, pp. 425-427). The composite verbal and math score dropped from 980 in 1963 to 890 in 1980. Race, class, parental education, composition of the pool, and gender could explain only about half of the decline (Advisory Panel on the Scholastic Aptitude Test Score Decline, 1977; Koretz, 1992). In fact, the scores for African Americans and Hispanics increased during this period (Burton & Jones, 1982; College Board, 1991; Koretz, 1992; Sowell, 1993).

The picture is bleakest, however, for America's most able students, the intellectually talented. In 1972, 11.2% of the high school seniors taking the SAT had verbal scores of more than 600. By 1983 this had dropped to 6.9% (Singal, 1991), a 38% loss. Moving upward to a higher echelon of talent, among those scoring 700 or more on the SAT-V, there was a 41% drop in the *actual number* of such students from 1972 to 1993 (from 17,560 to 10,407), even though more students were taking the SAT. SAT-M presents a different story. The percentage of scores that equaled or exceeded 600 did drop from 1972 to 1981, but the drop was less than 20% (17.9% vs. 14.4%) (Singal, 1991). Moreover, by 1991 this percentage had returned to the 1972 level. As a matter of fact, 17-year-olds scoring 700 or more on the SAT-M

increased by 143%. If only White Americans are studied, the percentage increase is still a solid 104% (Herrnstein & Murray, 1994, p. 428). An examination of GRE test scores reveals a similar pattern (Herrnstein & Murray, 1994, p. 429).

Even though SAT-M scores have actually increased recently for intellectually precocious students, the top 5% of American high school seniors nonetheless scored last on algebra and calculus tests administered to the top 5% of 12th graders from a dozen countries (U.S. Department of Education, 1986). In addition, it is in the items requiring higher levels of thinking (e.g., application, analysis) in which the largest differences emerge in international comparisons, not the items that focus on the rote recall of facts (LaPointe, Mead, & Phillips, 1989).

The previous sections have painted a picture of steady improvement in academic performance for below-average and average-ability students since the 1940s, with a temporary dip during the 1960s. Yet for America's brightest students, most of whom go on to college, the situation is reversed. For more than three decades each successive wave of such students has experienced a decline. Although the decline in mathematical ability eventually reversed itself, the marked decline in verbal ability has continued steadily for more than three decades. Either because of this—in conjunction with an ever larger number of students attending college—or because it is endemic for older populations to voice such worries (Berliner & Biddle, 1995), universities are expressing concern regarding the preparedness of students for college work (Choy & Gifford, 1990; Singal, 1991; Stahl, 1981) Moreover, the decline appears to be viewed as permanent. The College Board changed the scoring system used on the SAT so that both the verbal and math scores are directly comparable again. What has happened? We believe it is extreme egalitarianism.

Excellence Versus Equity: An Unnecessary Tension

Perhaps one of the most difficult tensions permeating American society, and hence its schools, is between equity and excellence (Cuban, 1990; Gardner, 1961, 1984; Resnick & Goodman, 1994). According to Gardner (1961, 1984), two hopes drive American society: individual achievement (or excellence) and equality. American society functions on the belief "that everyone would be free to perform at the level of his or her ability, motivation, and qualities of character and be rewarded accordingly" (Gardner, 1984, p.22); people should have the opportunity to develop excellence and be able to go where their talents take them. The other force in American society is that all should be equal. To facilitate the latter, unequal treatment of unequals is provided in an effort to make them more equal, a philosophy that supports the compensatory-education preschool program, Head Start, and Chapter 1, for example. We believe it is critical for

schools to focus on both individual achievement and equality, as both are challenges for American public education (Gardner, 1961, 1984; Singal, 1991). Economically disadvantaged children attending inner-city schools usually operate in environments that make it difficult, if not impossible, to learn. Students with developmental disabilities or those who demonstrate less readiness to learn need extra assistance. Much attention has been focused on such concerns, and that is proper. Such children need dedicated teachers and a sound curriculum; they also need a safe school environment and parental support (Lykken, 1995). It is only equitable that they be provided with resources so that they too can develop to their full potential and grow up to be functioning citizens.

The other challenge for education is less obvious than the one just noted; it involves nurturing the talents of America's intellectually advanced students. They too need a chance to develop to their full potential. Many are not receiving this opportunity and, collectively, they constitute America's largest group of underachievers (Reis, 1989).

Progress of society depends on dealing with both challenges (Gardner, 1961, 1984): We need to ensure that the distribution of educational resources is equitable; we also need to foster the development of excellence within children. Yet we seem to develop policies viewing excellence and equity as polarized incompatibilities of a zero-sum game, excellence versus equity, not excellence for all (Cuban, 1990). When excellence is of concern, Americans become too competitive. When equity is of concern, as it is currently and was in the 1960s, we dismantle programs designed to develop excellence (Sykes, 1995; Tannenbaum, 1979; Winner, 1996). Americans become hostile to precocious students, including highly achieving minority students. Some in Australia call this trend *coercive egalitarianism* (Schroeder-Davis, 1993) or *ressentiment* (Friedenberg, 1962)–"cutting down the tall poppies." No one should stand out (Sykes, 1995). Yet, "holding back the brightest students will not magically help the slower ones; *bringing the top down does not bring the bottom up*" (Silverman, 1994, p. 3).

This misguided view reflects our changed meaning of equality. According to Fromm (1956, p. 15), "In contemporary capitalistic society the meaning of equality has been transformed. By equality one refers to the equality of automatons; of men [and women] who have lost their individuality. *Equality today means 'sameness,' rather than 'oneness'*" of previous eras. We equate equality with identity (Mayr, 1963). Hence, today we strive for sameness in educational outcomes, rather than providing equal opportunities to develop differing potentialities, because educational outcomes have become a metric for human worth. Yet human dignity and worth should be assessed only in terms of those qualities of mind and spirit that are within the reach of every human being.

As much as we would like to see it, expecting equal educational outcomes is not realistic. It belies robust findings from developmental and

educational psychology and behavior genetics, which have revealed large individual differences in the rate of learning of school children and concluded that at least half of these differences are results of genetic variation (e.g., Bayley, 1955, 1970; Bouchard, 1993; Bouchard, Lykken, McGue, Tellegen, & Segal, 1990; George, Cohn, & Stanley, 1979; Keating, 1975; Keating & Schaefer, 1975; Keating & Stanley, 1972; Pedersen, Plomin, Nesselroade, & McClearn, 1992; Robinson & Robinson, 1976). Moreover, the rate of learning for each child varies considerably as a function of content area (verbal, numerical, and spatial) (Ackerman, 1987; Carroll, 1985; Humphreys, 1979; Snow, Kyllonen, & Marshalek, 1984). As was concluded in the *Prisoners of Time* report (NECTL, 1994, p. 7): "If experience, research, and common sense teach nothing else, they confirm the truism that people learn at different rates and in different ways with different subjects....Some students take three to six times longer than others to learn the same thing" (p. 15). These individual differences in rate of learning lead to differential academic outcomes, even among the intellectually able (Benbow, 1992a; Chauncey & Hilton, 1965; Harmon, 1961).

Responding to these individual differences and allowing for differential outcomes do not create elitism, a frequent charge against programs for precocious students. It is just the opposite (Allan, 1991). Hollingworth, reporting on research findings from studies of ability grouping, noted that "Conceit [of precocious students] was corrected, rather than fostered, by the experience of daily contact with a large number of [academic] equals" (Hollingworth, 1930, p. 445). As a matter of fact, decline in academic self-concept among precocious students has been documented as a result of participation in special programs (Gibbons, Benbow, & Gerrard, 1994; Marsh, Chessor, Craven, & Roche,1995). We do not view this decline as negative, because precocious students' self-concepts become more realistic through such experiences (Robinson & Noble, 1991). Moreover, when talented students are appropriately served, they also develop enhanced ability to get along with their age mates (Gross, 1993). This is probably because the development of faith in the potentialities of others, as well as in oneself, is possible only to the degree to which one has experienced the growth in one's own potentialities, the reality of one's own growth, and the strength of one's own power of reason (Fromm, 1956).

Further, we know that effective teaching involves providing the optimal match (Durden & Tangherlini, 1993; Hunt, 1961; Robinson & Robinson, 1982; Robinson, Roedell, & Jackson, 1979; Vygotsky, 1962), the posing of problems to an individual student that appreciably exceed the level already mastered. Too easy problems lead to boredom, too-difficult problems lead to frustration. Neither promote optimal learning or motivation to learn. "Available evidence suggests that when the variables of quality of instruction and opportunity to learn are properly managed, the variable of student perseverance—willingness to learn—will take care of itself"

(Carroll, 1989, p. 30). This leads to an adaptation of a quote by Thomas Jefferson: There is nothing so unequal as the equal (same) treatment of unequals (people with differing abilities).

It is also useful to note in this context that, although some other countries enable their brightest students to go as far as possible in their learning and actually celebrate their accomplishments, we have adopted the notion that one curriculum fits all. We also use our most able students to serve as assistant teachers, on the flawed pretext that you learn something best when you teach it, instead of allowing them to progress and develop their abilities through encounters with increasingly complex and challenging curricula.

We need to provide *all* children with an equal opportunity to learn and to develop to their full potential. This is consistent with the true meaning of education. The Latin root of the word *education* is *educare*, which literally means to lead forth or to bring out something that is potentially present. This involves being responsive to, and building on, individual differences. A one-size-fits-all educational system is not effective and hence not equitable. Equity should be viewed as equal access to an *appropriate* education. In the words of Sirotnik (1983, p. 26), "Quality of schooling includes not only time-on-task, but time well spent." We believe that eliminating sound programs for precocious students, programs that respond to their unique learning needs and ensure that their time is well-spent, should be considered as unethical as eliminating such programs for individuals with developmental disabilities. The ideal of a fully humane society is to treat all groups with concern and understanding—in other words, to be responsive to diversity.

Anti-Intellectualism

Americans and many others tend to be hostile to intellectual pursuits and those who are seen as intellectually precocious (Hofstadter, 1963; Winner, 1996). There is "an atmosphere of fervent malice and humorless imbecility" (Hofstadter, 1963, p.3) aimed at gifted achievers. Our society not only permits but also applauds certain areas of talent, such as sports, music, and the arts (Brown & Steinberg, 1990; Coleman, 1960; MacDonald, 1994). Yet intellectual talent generates considerable ambivalence, perhaps even threatening the self-esteem of others (e.g., Coleman, 1962). Schroeder-Davis (1993), Friedenberg (1962), and Sykes (1995) labeled this phenomenon as envy and punishment by peers, within a general ambiance of resentment—"the pursuit of excellence through isolation, prejudice, teasing, stereotyping, alienation, and, if all else fails, intimidation and physical violence" (Schroeder-Davis, 1993, p. 5).

For example, in a sixth-grade classroom, Torrance (1963) assigned students who had been identified as "high creatives" to work with four less creative individuals to solve a demanding task as a cooperative group. If the

task was successfully completed, all the students would be rewarded. Torrance observed the following behaviors directed at the high creatives by their less creative peers during the cooperative activity: "Techniques of control include open aggression and hostility, criticism, rejection and indifference, the use of organizational machinery to limit scope of operations, and exaltation to a position of power involving paper work and administrative responsibility."

Tannenbaum (1962) administered a questionnaire to high school students, asking them to rank the following three personality attributes: brilliant-average, studious-nonstudious, and athletic-nonathletic. Using the resulting response data, Tannenbaum constructed the most desirable "hypothetical" peer. The preferred attribute combination was the brilliant-nonstudious-athlete, whereas the least desirable combination was the brilliant-studious-nonathlete. The latter is, of course, the common stereotype of the gifted child. Tannenbaum concluded that a hard-working gifted student who has little if any interest in sports probably has little chance of being accepted by his or her age peers. Coleman (1960) reached the same conclusion by studying high school students.

Has the situation changed over the past 30 years? Cramond and Martin (1987) repeated Tannenbaum's study using 100 college students majoring in education.

Their results were essentially identical to those of Tannenbaum's adolescents. As in the original study, athleticism was most valued. And again, the brilliant studious nonathlete student was least desired. Do these findings change if the raters are seasoned teachers instead of students training to become teachers? To answer this question, Cramond and Martin administered their instrument to 83 experienced teachers undertaking graduate study and found that the findings do not change.

Average-nonstudious-athletes were seen as most desirable and brilliant-studious-nonathletes were seen as the least desirable. Experienced teachers seemed to prefer the average student, not the brilliant one (Cramond & Martin,1987; Solano, 1977). It is interesting to note that brilliance was not a critical factor for high school students in Tannenbaum's (1962) study. Rather, how brilliance combined with the other two dimensions was determinative. That is, a brilliant student who is nonstudious and athletic is seen as acceptable by his or her peers. It appears that students will not handicap a brilliant student if he or she cannot be faulted for being brilliant. Yet the hardworking gifted student is often taunted, being called a "greasy grind," "nerd," or "dweeb" (Brown & Steinberg, 1990; Coleman, 1960; Office of Educational Research and Improvement, 1993) or "high achieving drudges" (Berliner & Biddle, 1995). To pursue excellence, the students are forced to forfeit intimacy with their age peers (Gross, 1989) a Faustian deal of sorts.

The situation is especially difficult for highly able urban minority students (VanTassel-Baska, Patton, & Prillaman, 1991). African American

students are accused by their African American peers of "acting White" if they try to achieve in school (Fordham, 1995; Gregory, 1992; Office of Educational Research and Improvement, 1993). African American urban teenagers who try to achieve must do so in a hostile environment created by groups or gangs who terrorize bright African American students. These gangs not only physically abuse highly achieving students, they also intimidate them with death threats. Gregory (1992) concluded that the "pattern of abuse is a distinctive variation of nerd bashing that almost all bright, ambitious students—no matter what their color—face at some point in their young lives." (p. 44)

Here is a recent example of what, typically, a bright and ambitious student might face in a related context. A White female wanted to graduate from high school early. Her father described the response by some of her teachers:

> *One member chose to repeatedly denigrate Susan's decision in front of her classmates. Another initially refused to prepare an early semester final test, a courtesy normally accorded to graduating seniors. One or more unknown faculty members (a secret panel reportedly using a blackball system) also chose not to allow Susan to be admitted to the National Honor Society even though her applying credentials went far beyond most inductees. (Unpublished letter from a father, May 1995)*

In another instance, a high school senior who had won a national music composing contest did not receive the music award at graduation. The contest prize was deemed irrelevant because it was not school-based.

How do precocious students respond in the face of these attitudes held by their peers and teachers? Or to their peers equating "brains" of a nonathlete with being a "nerd" (Brown & Steinberg, 1990)? How do they respond to the discrimination against excellence in academics? Highly achieving gifted students often employ various strategies to avoid being labeled or recognized as such. They use denial, distraction (displaying excellence in another realm, preferably athletics), deviance (e.g., class clown), and underachievement (Brown & Steinberg, 1990; Coleman & Cross, 1988; Gross, 1993; Swiatek, 1995). Others feel alienated or become depressed (Heiss, 1995; Jensen, 1994), which also affects achievement. Researchers of the highly gifted, as far back as Leta Hollingworth, have reported that deliberate and skilled concealment of ability for peer acceptance is endemic among this group. For example, the majority of 160+ IQ children in Gross's (1993) study (n = 50) could not "recall a time in their lives when [deliberate underachievement] has not been an automatic survival mechanism, accepted as a painful but necessary part of living" (p. 276).

Another problem for precocious children is that few individuals, young or old, are willing to admit that they themselves have high measured ability.

Some enjoy denying their abilities. This reluctance to admit to or even accept being intellectually talented casts a negative light on the label. (Individuals in Mensa are a notable exception, but their public image is not one with which a talented child would necessarily feel positive identifying.) Bereiter (1976-1977), for example, asked undergraduates if their IQ, on the whole, was higher than individuals not attending college. The undergraduates denied being higher in IQ. Bereiter commented that he doubted whether music students attending a conservatory would deny having greater musical ability, that art students attending an art institute would deny having greater artistic skills, or that college athletes would deny having greater athletic prowess! Yet it was, and still is, unacceptable to admit that one has greater intellectual capabilities. Why? Bereiter (1976-1977, p. 37) suggested that, "IQ is like money. Publicly you proclaim that those who have a lot are no better than those who have a little. Privately, you wish you had a lot." It seems that being talented in academics engenders envy of which hardly any other talent is quite capable.

We hear much today about teaching students to appreciate diversity, in particular cultural diversity. Why is intellectual diversity not included? We wonder if Americans would allow any other group in our society to sustain and endure the abuse that highly achieving precocious children face on a daily basis in their schools. Readers may be wondering if the "abuse" makes a difference in terms of achievement. We believe so. It has been known for some time that high-ability students are less likely to underachieve in school settings in which students have positive feelings about scholastic pursuits (Coleman, 1960). The policy implication is, then, for schools to guarantee that their climate is not hostile to any child. School climate should be free from taunts and jeers based on race, gender, age, ethnicity, religion, sexual orientation, disability, and high ability (Kearney, 1993). This is important for an additional reason. "School is a place for learning. The message we give to all children about learning is linked in part to how we treat our most rapid learners. If they are ignored, exploited, damaged, held back in their progress, or teased, the message we give to all children is that academic learning doesn't pay for anyone" (Kearney, 1993, p. 16). Change is sorely needed but, we suspect, will not come easily.

Dumbing-Down of the Curriculum

The difficulty level of the curriculum in America's elementary and secondary schools has been systematically watered down (Altbach, Kelly, Petrie, & Weis, 1991; Bernstein, 1995; Chall & Conrad, 1991; Kirst, 1982; Koretz, 1987, 1992; Sykes, 1995), some say lowered by about two years over the past two or three decades. In *A Nation at Risk* (National Commission on Excellence in Education, 1983), the situation was described: "We have, in effect, been committing an act of unthinkable, unilateral educational disarmament" (p. 5). That may be too extreme of a statement. Nonetheless,

the need for and development of easier curricula may be traced back as far as 40 years to James Bryant Conant, who pushed the idea of the comprehensive high school (Conant,1967). Probably contrary to his intentions, this was translated into assembling students of all levels of ability, performance, and motivation in one physical setting and often into one classroom. The move to less rigorous curricula began in earnest, however, in the 1960s (Porter, 1990; Ravitch, 1983, 1985).

In part as a result of the increasing diversity of students entering public schools (but also see Sykes, 1995), education underwent reform to make it easier for the average student. As a result, it became less challenging for the precocious. Moreover, textbooks came to be judged by their readability rather than their content (Bernstein, 1985; Fiske, 1984; Gionfriddo, 1985). As a result, publishers began to remove "difficult" words and sophisticated syntax from their textbooks and lower the level of reading comprehension required. Subjects traditionally excluded in the curriculum for the lower end of the distribution (e.g., exposure to serious literature) were included but simplified to make them accessible to almost all. In this way, textbooks could be adopted in larger numbers. This was not all bad. Indeed, as discussed previously, learning for the average student was enhanced during this period of dumbing-down the curriculum. This could be a direct result of the changes in the curriculum and the form in which it was presented. A study of six textbooks over a 12-year period demonstrated, for example, that average students performed better with the simplified texts (Gionfriddo, 1985).

Because of the dumbing-down of the curriculum, adjustments to handle the educational needs of academically talented students, those for whom the curriculum was becoming increasingly less appropriate, grew in importance. This was overlooked (Archambault et al., 1992, 1993; Office of Educational Research and Improvement, 1993; Westberg et al., 1992) during the reform, however, so the problem of serving advanced students became more severe. As a result, gifted and talented elementary schoolchildren now begin the school year having already mastered from 35% to 50% of the curriculum to be offered in five basic subjects (National Commission on Excellence in Education, 1983). It is interesting to note that even for students of average ability, half of the mathematics curriculum in Grades 1 through 8 during the 1980s consisted of reviewing material already taught (not necessarily mastered) for all students (Flanders, 1987; Usiskin, 1987).

At the same time that textbooks were dumbed-down in the 1960s, a greater number of electives was permitted, and requirements in science, mathematics, and literature were relaxed. "Academic time was stolen to make room for a host of nonacademic activities" (National Education Commission on Time and Learning, 1994, p. 13). It is now the case that during the last four years of secondary school, American students spend about 40% of the time that is spent by Japanese, French, and German

students on academics (National Education Commission on Time and Learning, 1994). They also spend much less time in school because the school year is significantly shorter than in most other developed countries. Furthermore, the number of courses in the core disciplines was reduced, as were survey courses and reading requirements. Subjects that would push the best students to their limits, such as classical languages, were all but dropped. (A notable exception is the College Board's Advanced Placement Program.) The end result is that highly able students came to be exposed systematically to less knowledge; they were, in essence, given less of a chance to develop expertise. Much research in cognitive psychology and in creativity has revealed the importance of knowledge and practice for the development of expertise (Csikszentmihalyi, 1995; Ericsson, Krampe, & Heizmann, 1993; Mumford & Gustafson, 1988; Passow, 1985; Perkins & Salomon, 1989; Rabinowitz &; Glaser, 1985; Schoenfeld, 1985; Simonton, 1984; Snow, 1986). Moreover, knowledge seems to push the development of the ability to problem-solve (Bloom, 1956).

Another trend apparently beginning in the 1960s was grade inflation (Bejar & Blew, 1981; Breland, 1976; Etzioni, 1975; Walsh, 1979). Schools began to require less schoolwork and less homework to earn good grades. For example, by the early 1980s it was found that the average student spent only 3.5 hours on homework per week (Bishop, 1995). Yet grades have gone up at all levels including college. It is interesting to note that mean course grades tend to be higher in colleges of education than in other colleges. At Iowa State University, for example, 80% of students in education courses received As or Bs, whereas only 50% of students in courses offered by the College of Liberal Arts and Sciences did. That teachers trained under a more lenient grading philosophy seem to incorporate this approach into their own work with students is one apparently plausible interpretation.

Because of the dumbing-down of the curriculum and lenient grading, intellectually talented students are given less opportunity to experience rigorous intellectual challenge. Rather, it appears that they are rewarded for cruising through school by the inflated grades they receive for their work. It is not surprising, then, that they cannot display their true potential on the rare occasion when they are presented with intellectually challenging, rigorously (objectively!) graded material, as they do when they take the SAT or College Board achievement tests or must solve difficult problems on tests used for international comparisons. The situation is analogous to requiring the talented pole vaulter to practice only on a 6-foot bar in preparation for the Olympic trials.

In our minds, the public policy implication is that we need to toughen requirements and standards for highly able students. We need to be realistic about the prospects of doing this, however. Most American parents do not want drastic increases in the academic workload or tougher grading (Berliner & Biddle, 1995; Powell, Farrar, & Cohen, 1985). Most parents complain about the general state of education but are pleased with their

schools and with what their children are accomplishing (Berliner & Biddle, 1995; Elam, Rose, & Gallup, 1993; Stevenson & Lee, 1990; Stevenson & Stigler, 1992). By way of contrast, Japanese parents who have highly achieving children are not as satisfied with their children's progress (Stevenson, 1992; Stevenson & Stigler, 1992). In addition, average or even most college-bound students currently have little incentive to work harder in high school than they already do (Bishop, 1988, 1990, 1993). We recommend that bright students be given the opportunity to work meaningfully, at least as hard as their average-ability peers.

Ability Testing and Elitism

Ability tests were designed to do an unpopular job—to sort individuals, to identify talents and areas lacking strength. Given their purpose, "it would be surprising if the test were not the object of considerable hostility" (Gardner, 1984, p. 62). The better tests become in fulfilling their purpose, the more hostility they should engender, and indeed, IQ and ability testing have become inflammatory topics (Bereiter, 1976-1977). It is considered elitist to favor IQ or ability testing, whereas those who oppose such testing view themselves as egalitarians. For example, intelligence tests, or indeed any other ability or achievement test, are often portrayed in the media as the all-purpose instrument of oppression, a way of depriving certain unfortunate individuals of what, through their own hard work, they have already earned (Bereiter, 1976-1977) and even supporting eugenic motives. Educators are now being told that all children are gifted but in different ways (Winner, 1996). Educating intellectually talented children is intertwined with IQ and ability testing in that they share a historical tradition. As a result, espousing an antigiftedness attitude is often seen as virtuous, as being synonymous with holding egalitarian views.

Yet IQ and ability testing were not designed to and do not serve to protect the elite (Bond, 1995). IQ breaks down, rather than preserves, class privileges (Gardner, 1984). For example, in the 1970s it was reported that between 50% and 60% of sons from parents in the professional-managerial class stay in that class as they mature (Bereiter, 1976-1977). Yet Jencks and colleagues (1972, p. 81) calculated that if admission to the professional-managerial class had been based entirely on IQ, which is the best single predictor of job performance (Ree & Earles, 1992; Schmidt & Hunter, 1992), only a third of the professional sons would have remained. Thus, two thirds would come from lower socioeconomic classes. To some this news may come as a surprise. Because IQ correlates positively with socioeconomic status, it is often forgotten that there are large numbers of gifted children in lower economic groups (Humphreys, 1985). As Abraham Lincoln remarked, "The Lord prefers common-looking people. That is the reason He made so many of them." Ability testing can open up opportunities for gifted children in lower economic groups, opportunities

that might allow them to move into the professional-managerial class, rather than deny them such opportunities. "Even with their imperfections they (tests) are in important respects more fair than methods previously used" (Gardner, 1984, p. 64). Nonetheless, the message often communicated is that "the uses of tests have impeded rather than supported the pursuit of high and rigorous educational goals for all students" (Darling-Hammond, 1991, p. 222).

Ability testing was developed for educational purposes and is held in high regard by professionals in psychology (Snyderman & Rothman, 1987). Even by its critics, it is regarded as one of the single best predictors of academic success (H. Gardner, 1993; Sternberg, Wagner, Williams, & Horvath, 1995). Use of ability testing can identify both those who will experience learning problems in school and also those for whom much that is offered in school will be too easy. Nonetheless, at least partly because of legal challenges, many educators are extremely hesitant to administer aptitude and achievement tests and to use such test data to group students for instruction (see discussion later in this article). This results in students at both ends of the ability continuum receiving an education that is unresponsive to their learning needs.

Testing is critical for the appropriate placement of gifted students. Many do not appreciate this, perhaps because of ceiling effects in most testing instruments used with precocious students (Achter et al., 1996) and because schools tend to offer the generic "gifted program" or focus on general intelligence (IQ) rather than develop programs responsive to the different levels and types of giftedness. The typical "gifted treatment," usually a 1- to 2-hour pull-out experience in the school week (i.e., the 10% solution for a 100% problem), cannot possibly meet the educational needs of all gifted students and can give the appearance of being superfluous; it sometimes is.

IQ scores among gifted students represent fully one third of the entire IQ range (i.e., from about 135 to beyond 200). Moreover, the top 3% in ability (all of whom are typically considered gifted) earn SAT scores in the seventh grade that range from chance to the top score possible (Benbow, 1988; Keating & Stanley, 1972). Stanley (1996) even found three 7-year-olds who scored 540, 580, and 670, respectively, on SAT-M, whereas the average college-bound 12th-grade man scored only 500! (All three 7-year-olds later proceeded brilliantly into top graduate schools in mathematics or physics, several years accelerated in grade placement.) These individual differences within the gifted range are meaningful in terms of educational outcomes and vocational expectations (Benbow, 1992b). Between ages 13 and 23, for example, the academic achievement of students in the top quarter of the top 1% greatly exceed that of the bottom quarter of the top 1% (Benbow, 1992a), with the average difference, across a multitude of variables, approximating 0.65 standard deviation. Moreover, those advanced in verbal

compared to mathematical abilities excel in different domains (Benbow, 1995). Programs that do not respond to these individual differences in some way (e.g., some "enrichment" programs) are bound to be ineffective and hence may be inequitable. We believe it is appropriate for critics to point this out (e.g., Berliner & Biddle, 1995).

It does not matter "whether individual differences in ability are innate or are due to environmental differences, we must deal with them imaginatively and constructively" (Gardner, 1984, p. 73). The policy implication is that, for optimal development to occur, the educational experiences provided to gifted students need to be differentiated according to the child's degree of giftedness and area of giftedness. A child extremely talented mathematically will require different educational programming than one with moderate talent in mathematics and different programming again compared to a child highly talented verbally. Finetuning the educational services provided requires using appropriate testing instruments to make accurate diagnoses. Popular bias against tests hinders accurate assessment and planning, and hence mitigates against using what research has shown to promote optimal learning. In the words of John Gardner (1984), "The good society is not one that ignores individual differences but one that deals with them wisely and humanely" (p. 92), and valid psychological testing can be of assistance.

Detracking

At this juncture in American education, the concept of homogeneously grouping students according to ability for instruction is unfashionable (Deutsch, 1993; Oakes, 1985, 1990; Slavin, 1987, 1995). Indeed, the detracking (anti-homogeneous grouping) movement has a firm grip on the educational system and is being fueled by charges that ability-grouping produces inequalities in student opportunities and outcomes (Brewer, Rees, & Argys, 1995; Page & Keith, 1996). Jeannie Oakes, perhaps the movement's most visible advocate, claims that:

> *During the past decade, research on tracking and ability-grouped class assignments has provided striking evidence that these practices have a negative impact on most children's school opportunities and outcomes. Moreover, the negative consequences of these practices disproportionately affect low-income, African-American and Latino children. (Oakes & Lipton, 1992, p.448)*

Darling-Hammond (1991) stated, "These curricular differences explain much of the disparity between the achievement of white and minority students and between the achievement of higher- and lower-income students" (p. 222).

Robert Slavin, another strong advocate of detracking, noted, "I am personally opposed to ability grouping, and, particularly in the absence of any evidence of positive effects for anyone, I believe that between-class ability-grouping should be greatly reduced" (Slavin, 1990b, p. 506).

In a later publication, Slavin contended,

> *Ability grouping by its nature works against democratic and egalitarian norms, often creates racial or ethnic divisions, risks making terrible and long-lasting mistakes, and condemns many children to low-quality instruction and low-quality futures. If there were strong educational justification for ability grouping, the situation might be different . . . Let's work toward schools that can do a better job with all of our children. (1995, p.221)*

The evidence to support these views is striking, however, only by its almost complete absence (Allan, 1991; Brewer, Rees, & Argys, 1995; Page & Keith, 1996; VanTassel-Baska, 1992). As Passow (1988) noted, the literature on the topic ranges "from scholarly reports of research findings to philosophical statement to emotional polemics" (p. 205). It is unfortunate that polemics dominate. In fact, the scholarly reports and meta-analyses of the grouping literature are strongly in support of the practice of homogeneous grouping (grouping for instruction according to demonstrated skill and/or ability; Allan, 1991; Feldhusen, 1989, 1991; Feldhusen & Moon, 1992; Kulik & Kulik, 1982, 1987, 1992; Page & Keith, 1996; Rogers, 1991). Indeed, there is "remarkably little support for detracking efforts" (Brewer, Rees, & Argys, 1995, p. 211). Moreover, some of the support that can be found attributes differential outcomes to instructional practices rather than the equally plausible alternative of differences in behaviors that students themselves bring to the learning setting that affect the nature of the instruction (Gamoran, Nystrand, Berends, & LePore, 1995). For example, the teachers have little or no control over the fact that students in higher level classes tend to complete more of their assignments than students in lower level classes.

The key work cited as supporting the need for detracking—with the argument that grouping harms some students—is Slavin's (1981, 1988, 1990a, 1990b) *best-evidence syntheses* (i.e., meta-analytic review of the literature). Yet these syntheses did not result in a conclusion that any students were harmed. Rather, Slavin's conclusion was that the results were sufficiently mixed as not to demonstrate any overall positive effects. Yet many have criticized Slavin's methods, assumptions, and conclusions (Allan, 1991; Brewer, Rees, & Argys, 1995; Gallagher, 1995; Garnoran, 1987; Hiebert, 1987; C. Kulik, 1985; J. Kulik, 1991; Kulik & Kulik, 1987; Nevi, 1987; Robinson, 1990; Walberg, 1988b). Perhaps the most critical objection

is that Slavin studied grouping in isolation (i.e., no curricular modifications) and excluded gifted students from his analyses (e.g., Allan, 1991). Grouping was not intended for students within the average ranges of ability. Moreover, probably all would agree that grouping students without differentiating the curriculum is pointless (see Gallagher, 1995; Robinson, 1990). Yet, once the curriculum is differentiated, outcomes cannot be measured using the same metric. Students have had different experiences.

In the interest of equity, some would object to providing differing experiences within homogeneously grouped classes. It is assumed that

> *If sophisticated math programs are good for students who are advanced in mathematics, then such programs must be good for all students, regardless of mathematical aptitude or interest. This is a prescription for mathematical mediocrity that does not materially improve the status of those low-track students whom such policies are supposedly designed to help....Equity, here, does not consist of giving the same material to all students, regardless of aptitude or past performance; rather, it means giving each student what he or she most needs, and that would require differentiating the math curriculum to meet the differing needs of these students. (Gallagher, 1995, p. 217; also see Gardner, 1984)*

Such a policy, some would contend, is still unfair because it results in the advanced students being taught by teachers with higher educational credentials (e.g., Brewer et al., 1995). Such charges seem to ignore the practical issue of who has the requisite knowledge to teach the advanced mathematics. As Gallagher (1995, p. 217) noted, "if you are going to conduct an advanced course in spherical trigonometry or geometry, it might be a good idea to have a teacher who knows something about the subject."

The literature on grouping and detracking is voluminous, however; and conducting an exhaustive review and analysis that gives justice to the topic goes beyond the scope of this article. Suffice it to say, we feel that Page and Keith (1996) captured the situation well when they drew the conclusion from their empirical study and analysis of the literature that homogeneous grouping improves the achievement of high ability youth, especially high ability minority youth; is not harmful to low ability students' (or any group of students') achievement, aspirations, or self-perceptions; and is favored by classroom teachers. It is also favored by adults who were themselves identified as gifted when children. At age 33, these gifted adults are strongly opposed to abandoning homogeneous grouping in schools (Benbow, 1995). The data, we believe, strongly contradict Slavin's (1995) view that "there is little basis for the fear that [untracking programs] will be detrimental to the performance of high achievers" (p. 221). We believe it is detrimental.

Beyond research supporting its use, what is the rationale for ability-grouping? Ability and achievement grouping, rather than grouping by age, is effective because (a) it provides a better match between the developmental readiness and needs of a given student and the instruction he or she receives, and (b) students differing in ability respond differently to various educational strategies or teaching methods. Thus, the discussion should not revolve around whether to group for instruction. We do that already but use the wrong criterion—age. What should be of concern to educators is what is appropriate to teach and how, to what students, and when. In this regard, it is important to keep in mind that intellectually advanced students benefit most from instruction that gives students considerable responsibility for organizing and interpreting information rather than from tightly structured lessons (Cronbach, 1989).

As an aside, homogeneous grouping for certain subjects, but not all, is also effective because it can provide a better social environment for children, at least for precocious children; they are with children for part of the day who are more like themselves academically (Lubinski & Benbow, 1995a). That is, participation in an ability-grouped program reduces deliberate underachievement among gifted students because they have less need to deny their abilities for peer acceptance. It also fosters greater self-acceptance because they can be with those who understand their needs, humor, and vocabulary and do not make fun of them. Although some would object, believing that gifted students might benefit but the low ability students would be left within a stigmatizing backwater environment, we question whether gifted students are truly the role models of such students in the first place (Schunk, 1987) and whether the tone they set is truly appreciated by other students. Nonetheless, heterogeneous grouping can be effective in some circumstances–for example, when the high ability students act as explainers and the low ability students ask questions (Webb, 1982a, 1982b). A problem would occur, however, if the highs and lows occupied only these roles in school, not only in terms of opportunity to learn but also in the labeling of students that may result. Also, the "children with the most advanced capabilities (who differ the most from the average) are the ones most likely to be marginalized in the heterogeneous classroom" (Yewchuk, 1995, p. 24).

Concern over the detracking movement is not confined to the gifted-child community. Within special education as well concern is being raised about detracking. A quote from Kauffman (1993) is illustrative:

> *Some have suggested that where students with disabilities are taught is the variable largely responsible for our disappointment in what students learn and how they perceive themselves. This belief has sometimes been promulgated by those critical of teaching students in locations other than regular classrooms, who have argued that we now have the*

> *means to transform the mainstream of public education so that all students can be taught in the regular schools and classes....Neither history of special education . . . nor the reviews of the effects of placement . . . suggest that the location of supports is the key to improvement of special education outcomes. Furthermore, recent empirical evidence does not indicate that we currently have effective and reliable strategies for improving and sustaining outcomes for all students in regular classrooms. (p. 8)*

The policy implication, we feel, is clear. In the interest of the achievement of precocious students and, we believe, of other students as well, we need to halt or at least slow down the detracking movement in order to reflect and determine where it would be appropriate to apply and how. We need to continue homogeneous grouping of instruction in certain domains. Grouping boosts the achievement of the brightest students and perhaps even all students (Kulik & Kulik, 1982, 1992). As the National Education Commission on Time and Learning (1994, p. 31) concluded, grouping children by age should become a thing of the past. It makes no more sense to put a computer-illiterate second-grade student in Introduction to Computers at that grade level than it does to place a recent Hispanic immigrant in Introductory Spanish. Both should be placed at their current levels of accomplishment.

Fads

Much of psychology and education is attracted to cyclic faddism (Cuban, 1990; Dunnette, 1966; Kauffman, 1993). Many educators become enamored with new methods of teaching. At times the attraction to fads is so strong that novel methods are applied without first evaluating their merits, ignoring the lessons of history (Cuban, 1990; Dunnette, 1966; Kauffman, 1993; Reschly & Sabers, 1974). Albert Shanker, President of the American Federation of Teachers, noted that "policy makers and reformers have gotten caught up in faddish and radical schemes for improving schools" (Pipho, 1995, p. 199). Moreover, as was noted in the *Prisoners of Time* report (National Education Commission on Time and Learning, 1994, p. 29): "Education reform has moved in fits and starts. Indeed as different helmsmen have seized the wheel, the ship of education reform has gone round in circles." Detracking, a problem so big in our view that it deserved its own section in this article, is an example of this cyclic faddism. A few other examples should amply illustrate the point. How many recall post-1957 "new math," where no one seemed to realize that not all people can think like mathematicians? Or PSSC physics? What about mastery learning or team teaching? Spiral curriculum? Twelve-month schools? Performance contracting? Mass instruction via television? What about

constructivism, which is being promoted by researchers who "have ignored or dismissed a large body of relevant psychological research and theory" (Geary, 1995, p. 31), and performance-based assessment? Multiple intelligences? Then there are the Language Experience Approach to Reading, Whole Language Approach to Reading, mainstreaming, inclusion, progressive education, and open education? Now there is school reform. There are many fads and they are not all new. And it is truly unfortunate that many of these approaches are well-supported by the research in psychology and education.

Language Experience Approach to Reading and Mainstreaming in the 1970s

These approaches were repackaged recently and called, respectively, *whole language* and *inclusion*. The concept of a 12-month school first arose in 1924 in Trenton, New Jersey and, of course, much is currently being said about it (National Education Commission on Time and Learning, 1994). Those in the health professions have seen performance-based assessment methods come and go since at least 1910 (Swanson, Norman, & Linn, 1995), and many are voicing concern over whether it can possibly live up to its promises, even if it is a fairer form of assessment than traditional approaches (Bond, 1995; Guion, 1995). Yet most visible on the educational landscape today is school reform. School reform is also not new; it represents an idea that has been repackaged many times. School reform strikingly resembles open education of the 1960s. Open education, in turn, was a new version of progressive education of the 1930s (Cuban, 1990; Reschly & Sabers, 1974). Many aspects of open and progressive education failed and were abandoned. Reschly and Sabers (1974) warned educators involved with open education not to repeat the mistakes associated with progressive education lest they suffer the same fate. Their warnings went unheeded. It is not surprising that open education came and went, just like its predecessor and just like many other educational innovations.

It is interesting to note that the current repackaging of open and progressive education, school reform, is receiving warnings (e.g., Kauffman, 1993) similar to those issued by Reschly and Sabers (1974) to the open education movement 20 years ago. (Even warnings against faddism seem to be cyclic!) Santayana (1905), Kauffman (1993), and Reschly and Sabers (1974) have warned, "Those who cannot remember the past are condemned to repeat it"—and we do.

To be clear, we do not see all of the current school reform as being bad. The National Council of Teachers of Mathematics (NCTM) standards and associated curricula reform, partly based on cognitive theory, are instances in which reform worked and has enlightened educational practice and programs with gifted students. What we and many others react to in the

current reform movement is egalitarianism in its extreme form. We worry about those egalitarians (e.g., Oakes, Darling-Hammond, George, Slavin, Spady, Kohn, McIntosh, Willie, etc.—see Sykes, 1995) who seem to deny that there are inequalities in capacity, eliminate situations in which such inequalities might exhibit themselves, and ensure that if such differences do emerge, they will not result in differences in status (Gardner, 1984, p. 36).

Indeed, school practice often moves ahead rather jerkily, more on the basis of enthusiasm and supposition than via basic and applied research (Kauffman, 1993; National Education Commission on Time and Learning,1994). Much of it is full of politically motivated hyperbole, such as "U.S. students will be first in the world in science and mathematics achievement by the year 2000" (Goals 2000; U.S. Department of Education, 1991, p. 3). This can be seen as a useful tactic for administrators to employ. By creating a moving target, they are able to deflect criticism of present methods. Some educational reform might even be described as simply verbiage used to create a positive image. It is unfortunate that the image seems to be becoming more important than good ideas (Kauffman, 1993).

Moreover, innovations are promoted by engaging in a zero-sum activity (Cuban, 1990). Old ways of doing things are rejected or put down. It is as if a new approach can be found acceptable only if the previous approach is thoroughly debunked. For example, Howard Gardner (1993) promoted his theory of multiple intelligences by putting down psychometric approaches to intelligence rather than building on such work (see Lubinski & Benbow, 1995b, for a critique of Gardner). Smith-Maddox and Wheelock (1995) outlined some of the activities being promoted as part of school reform. These activities might strike one as quite desirable (e.g., encouraging students to take high-level classes, keeping options open). But why are they justified by attacking homogeneous grouping? Why are reforms and grouping looked at as mutually exclusive? The latter does not preclude the former. Coleman and Gallagher (1995), for example, clearly showed that, through careful planning, cooperative learning can be blended with middle school ideas and with principles of gifted education. It is not the choice of one over the other. Psychology and education should be cumulative sciences.

Indeed, the negative approaches to promoting educational reform engender a "debate" that is clangorous and rancorous. It also puts the discussion into the hands of the polarizers, those who espouse the extremes of egalitarianism or individual achievement. This diverts energy and resources into battles with real or imagined enemies rather than into solving problems (Raspberry, 1992). As Fred Hechinger (1983) noted, "There is no lack of generals who are calling for a campaign to improve schools.... What is lacking is an army of teachers to fight the battles for reforms." (p. C5) Hence, most of the problems remain even after "enemies" are vanquished.

There can, of course, be positive outcomes associated with educational innovations, some of which are soundly based and built on previous research findings. It is the exception that harms the reputation of educators.

Yet even exceptions can have positive benefits. They can create enthusiasm among teachers, for example. Moreover, the novelty provides stimulation and a reprieve from encountering the rather routine, day-by-day subject matter. The associated benefits, however, are often negated by the confusion, resentment, the feeling of being overwhelmed by continually having to change tack, and even educational chaos that can be caused by a new procedure (e.g., New Math), especially if forced on teachers from above. (Forcing a teacher to adopt a new educational innovation may be akin to demanding that Cezanne paint like Rembrandt.) If the innovation persists long enough, the chaos and confusion are eventually brought under control, but by that time the novelty has worn off. This results in a lack of measurable effects. It is as if the positive effects of the novelty of an "educational innovation" are counterbalanced by the confusion associated with novelty, operating in a zero-sum manner in terms of progress.

Given all of these considerations and considering that innovations seem to come before the research evidence has been gathered, it is tempting to ponder what would happen if educators had the same strict guidelines imposed on them as, say, the Food and Drug Administration has for letting new medicines be put on the market. They would have to test educational innovations rigorously, often in double-blind experiments, for a substantial period of time (perhaps as long as 10 years) before the innovations could be certified for use with children. By then, proper strategies for implementation would have been worked out. In contrast, anyone can propose almost anything, and any gullible or desperate educator can try it out immediately with growing kids in the classroom—no need to pretest or even run carefully supervised trials ahead of time.

Fads affect the quality of education to which all children are exposed. Yet educational programs directed at gifted children are perhaps most greatly affected by the cyclic nature of education and its "reforms." Such children are prime examples of the influences of such reform. Educating gifted children is approached as if it were a fad or an unnecessary frill. Ad hoc provisions are made for them rather than systematic programs attendant to their learning needs (Tannenbaum, 1986). It is often not realized that many gifted children do not make it on their own (Benbow, 1991; Ford, Russo, & Halris, 1995; Harrington, Harrington, & Karns, 1991; National Education Commission on Time and Learning, 1994; Silverman, 1994). Some come from families that can provide what these children need in spite of their schools. Others are less fortunate. Some become drop-outs (Marland, 1972; National Commission on Excellence in Education, 1983), delinquents (Seeley & Mahoney, 1981), underachievers (National Commission on Excellence in Education, 1983; Rimm, 1987; Supplee, 1990; Whitmore, 1989), depressed, drug addicts (Engel, 1989), and victims of suicide (Delisle, 1990).

Moreover, commitment to gifted children cycles; progress accrued in one cycle is dismantled in the next (Ford et al., 1995; Resnicic & Goodman,

1994). The general trend appears to be that society suddenly realizes, because of a particular event (e.g., Sputnik—see Gallagher, 1988; Goodlad, 1964), that society's progress depends on gifted children. They are seen as the solution to what ails us. As a consequence, programs for gifted individuals are allowed to develop and even flourish for a while. Gifted students become a fad. Yet it does not take long for the pendulum to swing back. When educators have forgotten about the event that motivated them to invest in the education of gifted students in the first place and their concern for being taken over by an elite group reemerges (Gardner, 1961, 1984), the funding and support for gifted education starts to dissipate. Then the fad becomes antigiftedness. Gifted children tend to be either "in" or "out"; they are either embraced or spurned (Tannenbaum, 1979). They are alternately applauded, attacked, "mined" as a natural resource, and abandoned (Silverman, 1994), an outcome of the dual concern in our society to promote excellence and equality (Gardner, 1961, 1984), as was discussed previously.

After several years of progress in the late 1980s and early 1990s (with gifted students being "in") (Benbow,1992b; Silverman, 1994), gifted children are on the "outs" again. Programs for gifted students are not politically correct now. It seems to be acceptable to attack gifted children and educators working on their behalf, accusing them, for example, of propagating views on the superiority of the White upper-classes and the inferiority of dark-skinned working-class people (Margolin, 1994). In a publicity leaflet for Margolin's (1994) book, for example, it is stated that,

> *The author explains how gifted education is the obverse side of the "pedagogy of the oppressed," how it supports racism and classism, and singles out children of the affluent for training in social dominance. In exposing the role of gifted education in propagating inequality....Margolin shows that ... the gifted child curriculum has instead focused on articulating the prerogatives of the white upper class.*

As a consequence of these attitudes, programs are being dismantled across the country (Benbow, 1992b; Winner, 1996), quickly becoming an endangered species (Silverman, 1994). The rhetoric against programs for gifted children condemns them as further privileges bestowed on the already privileged (e.g., Berliner & Biddle, 1995) or those who just perceive themselves to be gifted (Winner, 1996), rather than recognizing such programs as a necessary response to the needs of children who learn differently. Silverman (1994, pp. 12) wrote,

> *The extent to which zeal has won over logic is nowhere more apparent than in a middle school in Gainesville, Florida, where all eighth graders learn algebra together, even if some*

haven't mastered addition and others are ready for calculus. The orchestrator of this plan has launched a vitriolic attack against parents of gifted children, deriding them for attempting to secure "special treatment" for their children (George, 1988). He gives advice to school personnel on how to handle these parents (dismissively, of course) (George, 1992). One can guess how such blatant bigotry would be addressed by the School Board and state legislator if it were aimed at parents of any other group with exceptional need. George (1992) stated that "no school should tolerate organizational arrangements that build on or contribute to the belief that some students are better than others" and "all students [should be] deemed worthy and capable of learning everything the school has to offer." The implication is clear. If one child is ready and eager to read Shakespeare and another is not, it is "not fair" to allow that child to read Shakespeare, because that would deem those who are not ready as "unworthy." So, schools should no longer offer Shakespeare unless every student can grasp it?

That suggestion may appear far-fetched. Gross (1993), however, reported that a boy who earned an SAT-M score of 540 in the 4th grade (the average college-bound 12th-grade man earns a score of about 500) was forced to take fourth-grade mathematics with his classmates. The building principal had insisted that it would be "a violation of the principles of social justice" if this boy would be given material that could not be mastered by all the other 4th-grade students.

It is interesting in this regard that schools do not worry about making varsity football or basketball accessible to all students; they accept and tolerate that some students are much abler than others in this area, not worrying about principles of social justice. Surely, provisions for gifted children are as democratic as provisions for any other exceptional children. A gifted child is a child with special needs; he or she should have the right to learn new concepts in school every day (Silverman, 1994). The public seems (hesitatingly) to accept this, however, only when society and education are at the right point within the cycle.

As a result of the forces operating in our society, the level of services provided to gifted students in many schools today is not only inadequate, but becoming unacceptable. The trend is not to group them for instruction. Educators generally do not accelerate gifted students in subject-matter or grade-placement even though it is the practice yielding the largest achievement gains with no negative effect on social and emotional development (Benbow, 1991; Hobson, 1963; Kulik & Kulik, 1984, 1992; Rogers, 1991; Swiatek & Benbow, 1992). Most schools do not have any programs for gifted students, opting instead to "serve" them through the

regular classroom. Yet regular classroom services provided to gifted students in schools with formal gifted programs are similar to those provided in schools without formal programs; only minor modifications in the classroom curriculum occur (Archambault et al., 1992, 1993). Hence, when gifted programs or homogeneous grouping are abolished, precocious students are hurt, in contrast to Slavin's (1995) claim to the contrary. George (1988, p. 23) has maintained that, "No group—nor individual student—should be expected to sacrifice an excellent education so that others might do better." In conclusion, American gifted students are appropriately served only sporadically—when they are the fad. When they are served, the program tends to represent the latest idea, not what educational and psychological research has shown to be effective. Few programs for gifted students are developed to be responsive to the wide range of individual differences at the high end of the ability continuum. Given this, coupled with the fact that gifted students receive, on average, no instructional or curricular differentiation in 84% of the instructional activities in which they participate (Westberg et al., 1992), is it surprising that the achievement of our most talented students falls short of similar students around the world?

Summary

We have outlined various reasons why the achievement gap between students in the United States and other countries, as documented by international comparison studies, is the largest for America's brightest students. The converging lines of evidence indicate that most of America's top students do not receive an education that helps them develop optimally and, hence, remain competitive with students from other countries. We view this as being a result of the tensions between excellence and equity in American society, anti-intellectualism, the dumbing-down of the curriculum, reluctance to use ability testing and homogeneous grouping, and fads in education.

For optimal development or actualization of talent to occur, students must be provided with the opportunity to develop, seek out, and create an appropriate learning environment (Scarr, 1992; Scarr & McCartney, 1983). Indeed, talent development requires considerable cultivation and nourishment (Benbow, Lubinski, & Sanjani, 1996; Bloom, 1985; Bouchard, Lykken, McGue, Tellegen, & Segal, 1990; Ericsson et al., 1993; Ericsson, Krampe, & Tesc-Romer, 1977; Feldman, 1986; Walberg, 1988a). Although some people may have greatness thrust on them, very few have excellence thrust on them (Gardner, 1984). They achieve it—not unwittingly, not by doing what comes naturally, not by luck— through hard work at learning.

We turn our attention next to how gifted students can be nurtured in a fair and cost-effective manner that is in the best interest of this nation.

How to Provide an Equitable Education to Precocious Students

There are multiple means for adjusting learning experiences to meet the educational needs of gifted students. They all fall into one of four categories: enrichment, acceleration, homogeneous grouping, or individualization. The most effective mechanisms, however, are acceleration and homogeneous grouping that involve differentiating the curriculum and adjusting methods of teaching (Kulik & Kulik, 1982, 1984, 1992). We have already discussed and advocated the use of homogeneous grouping. Here we focus on acceleration, which is at the heart of the model[1] developed and promoted by our Study of Mathematically Precocious Youth (SMPY) and special high schools and early college-entrance programs for gifted students (an example of acceleration and homogeneous grouping).

Acceleration

Use of educational acceleration provides instruction that is homogeneously grouped on the basis of ability. It is homogeneous grouping without regard to age. Acceleration, alone or in combination with other enriching educational programs (e.g., Benbow, 1991; Stanley & Benbow, 1982) but especially in conjunction with curriculum differentiation, is a best practice for serving the academic needs of gifted students (Benbow, 1991; Boatman, Davis, & Benbow, 1995). It is an educational option that is perhaps most strongly supported by empirical research (Benbow, 1991), that is included in a governmental list of "what works" (U.S. Department of Education, 1986), and endorsed by the National Education Commission on Time and Learning (1994) and by members of the reform movement (Berliner & Biddle, 1995; Slavin, 1990a, 1990b). Because acceleration is so reluctantly used by parents and educators, we provide a rationale for its use. (Much of it also applies to homogeneous grouping, of course.)

First, acceleration, which is much more than simply grade skipping (see the discussion that follows and Southern, Jones, & Stanley,1993), can by no means be realistically described as elitist. It cannot be argued that accelerated students receive services or participate in opportunities that would be beneficial to all students. Accelerated students are simply given access to certain curricula at ages younger than typical, at an age that more

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[1]The SMPY model involves using acceleration to meet the academic needs of precocious children as determined through comprehensive and diagnostic testing. The interventions provided respond to individual needs to ensure that the education received is commensurate with individual capabilities.

closely coincides with when they are ready for it. Time is "adjusted to meet the individual needs of learners, rather than the administrative convenience of adults" (National Education Commission on Time and Learning, 1994, p. 31). Acceleration is also cost effective, actually saving school dollars (VanTassel-Baska, 1989). Moreover, acceleration is an optimal method for serving gifted students in rural or sparsely populated areas (e.g., Benbow, Argo, & Glass, 1992; Howley, 1989; Southern & Jones, 1992). It is ironic, however, that it is least likely to be used in those settings (Southern & Jones, 1992). Further, acceleration may help talented individuals complete their education sooner and at a higher level. It may, therefore, add productive years to their professional lives or afford them the opportunity to pursue several interests. It allows gifted students to cut short the time they are dependent on society (i.e., throughout their schooling years). Most important, however, acceleration rescues gifted students from the boredom of insufficient challenges (Berliner & Biddle, 1995; Kulik & Kulik, 1984; Stanley, 1977). These are only some of the many practical benefits of acceleration.

A more theoretically based justification for acceleration also can be provided. Acceleration is an educational practice consistent with theories of learning and achievement motivation (Benbow, 1991). Learning is optimized, as is growth in achievement motivation, when the individual is presented with tasks that match or slightly exceed capabilities (Dweck & Elliott, 1983; Harter, 1981; Heckhausen, 1982; Hunt, 1961; Robinson, 1983; Wallach, 1978). This is analogous to individual readiness, which embodies three basic principles from educational psychology: working from the simple to the complex, working from the known to the unknown, and starting each lesson near each student's current level of achievement (Page & Keith, 1996). As Bloom and Sosniak (1981) argued, talent development proceeds at an individual rate from practice to mastery of increasingly more difficult and complex skills. Acceleration ensures that the precocious student is presented with the sufficiently difficult and complex tasks needed to maintain this development. Some might argue that, although acceleration may enhance the achievement motivation of gifted children, it may decrease the achievement motivation of their age mates who become deprived of a role model when the gifted child is removed from the classroom. This is a mistaken belief, even if students can work well in heterogeneous groups when they take the role as explainers (Webb, 1982a, 1982b). Gifted students are not the role models of typical students. We model on individuals perceived to be similar to ourselves, not those who demonstrate flawless performance (Bandura, 1986; Schunk, 1987). Thus, one could even argue that removal of gifted pupils from the regular classroom might enhance achievement motivation of other students by increasing their sense of self-efficacy (Allan, 1991; Fiedler, Lange, & Winebrenner, 1993; Kulik & Kulik, 1982).

Although it is beyond the scope of this article, Benbow (1991) reviewed some of the research in cognitive psychology that would be consistent with

the idea that acceleration has the potential to enhance creativity, achievement, and higher-order thinking skills. Benbow (1991) also noted that acceleration can be justified on social and emotional grounds, because gifted students tend to be socially mature and prefer older friends. As a matter of fact, Gross (1993) has found that acceleration enhances self-esteem of accelerated children. David Elkind (1988), the author of *The Hurried Child*, endorsed acceleration because it is consistent with his notions of developmental placement. Elkind stated,

> ***Promotion of intellectually gifted children is simply another way of attempting to match the curriculum to the child's abilities, not to accelerate those abilities. Accordingly, the promotion of intellectually gifted children in no way contradicts the accepted view of the limits of training on development, nor the negative effects of hurrying. Indeed, the positive effects of promoting intellectually gifted children provide additional evidence for the benefits of developmentally appropriate curricula. (1988, p.2)***

Finally, acceleration of gifted students is also consistent with the Theory of Work Adjustment (Dawis & Lofquist, 1984; Lofquist & Dawis, 1969, 1991), a prominent theory of vocational adjustment that has been extended to educational adjustment (Benbow & Lubinski, 1994; Lubinski & Benbow, 1995a).

Acceleration, therefore, can be justified on theoretical, practical, and empirical grounds. Yet the degree to which it is used in schools does not reflect the degree of empirical support in place for this practice. This may be a result in part of the fact that *acceleration* is really a misnomer. Acceleration of talented students is not pushing the child along but responding to an existing advancement. It is simply deciding that competence rather than age should be the determining factor for when an individual obtains access to particular curricula or experiences. This is precisely what we do in the arts and athletics. Why not academics? Moreover, acceleration is not meant to be used in isolation. The goal is to develop a combination of accelerative options, enrichment, and out-of-school opportunities (already available resources) that reflects the best possible alternative for educating a specific child and, thereby, enhances educational adjustment. This approach has been labeled *curricular flexibility* (Benbow & Stanley, 1983) and reflects the proper psychology of talent. Wallach (1978, p. 617) argued, "the proper psychology of talent is one that tries to be reasonably specific in defining competencies as manifested in the world, with instruction aimed at developing the very competencies so defined."

Of what does acceleration or curricular flexibility consist? It includes early admittance to school (Proctor, Feldhusen, & Black, 1988), grade

skipping (Feldhusen, Proctor, & Black, 1986), entering college early with or without a high school diploma (most high schools will award a high school diploma after completion of one year of college; Brody & Stanley, 1991; Eisenberg & George, 1979; Janos, Robinson, & Lunneborg, 1989; Robinson & Janos, 1986; Stanley & Benbow, 1983), entering a college early-entrance program such as those at Simon's Rock College or the Texas Academy of Mathematics and Science (Stanley, 1991), the International Baccalaureate (see description in Cox, Daniels, & Boston, 1986), taking a course (e.g., Algebra 1) one or more years earlier than typical (Kolitch & Brody, 1992), taking college courses on a part-time basis while still in secondary school (Solano & George, 1976), taking special fast-paced classes during the summer or academic year (Bartkovich & George, 1980; Durden, 1980; Lynch, 1992; Stanley & Stanley, 1986; Swiatek & Benbow, 1991b; VanTassel-Baska, 1983), completing two years of a subject in one year, compressing curricula, taking Advanced Placement Program (AP) courses and examinations (AP courses are college-level courses taught in high school but may garner college credit for the student if final exam scores are sufficiently high; Zak, Benbow, & Stanley, 1983), individual tutoring in advanced subject matter (Stanley, 1979), participating in competitions such as the Mathematical Olympiads for Elementary Schools, MathCounts (for seventh- and eighth-grade students), the American High Schools Mathematics Examination, the Westinghouse Science Talent Search, and the Putnam (college mathematics) Competition (such competitions enable high-potential students to interact directly and indirectly with their true intellectual peers while working with advanced subject matter), earning a master's degree simultaneously with a bachelor's degree, and joint MD/PhD programs. Acceleration essentially consists of using with younger gifted students already available resources, curricula, or programs designed for older students (Benbow & Stanley, 1983). It is a practice consistent with basic research findings revealing that gifted students are primarily precocious or developmentally advanced (Dark & Benbow, 1990, 1991, & 1994; Elkind, 1988) and that this applies to their socioaffective as well as cognitive development (Janos & Robinson, 1985; Lehman & Erdwins, 1981; Robinson & Noble, 1991).

We noted earlier that educators in the United States are far too eager to adopt new practices and procedures without carefully examining their research base. The strength of our model of talent development, the SMPY model (Benbow, 1986; Stanley, 1977), is that it is research based. There is a wealth of evidence to support its adoption. Much of this research comes from SMPY itself. SMPY is conducting a 50-year longitudinal study, involving 6,000 intellectually gifted individuals identified over 20 years and grouped into five cohorts (Lubinski & Benbow, 1994). Through this study we are working toward developing a comprehensive and refined understanding of the processes whereby precocious forms of intellectual talent develop into noteworthy forms of adult achievement and creative accomplishment. How

various educational interventions or opportunities, such as acceleration, facilitate the development of potential into actual achievement and creativity is a question of special importance to our research.

Although multiple studies have been conducted on the variety of acceleration options that SMPY has promoted with its participants (see Benbow, 1991, for a review), we can summarize the results: When differences are found, they tend to favor the accelerates over the nonaccelerates, regardless of the mode of acceleration (e.g., Swiatek & Benbow, 1991a, 1991b), even 50 years later (Cronbach, 1996). In addition, most students are satisfied with their acceleration in both the short- and long-term (Richardson & Benbow, 1990; Swiatek & Benbow, 1992). This is consistent with the hundreds of studies in the scientific literature documenting this effect. It is not surprising that not a single study has been reported that shows acceleration to produce long-term damage to gifted students. To the contrary, most accelerated gifted students thrive, and those students who are not accelerated tend to exhibit lower achievement, have more behavior problems, feel less comfortable in school, and have poorer attitudes (Benbow, 1991).

Special High Schools

Over the years, special schools to nurture highly able high school students properly have been created and deserve to be highlighted. Perhaps the best known of these are the Bronx High School of Science, Stuyvesant High School, and the Hunter College School for the Gifted. All three are located in New York City, are municipally supported, and are nonresidential. More recently, in Fairfax County, Virginia, there is the highly selective Thomas Jefferson High School for Science and Technology, publicly financed and nonresidential.

Starting in 1980, a new type of special school began to appear. The first was the North Carolina School of Science and Mathematics (NCSSM), located in Durham. Selective, residential, and state-supported, it consists of 11th and 12th grades. It has been quite successful in helping bright boys and girls live up to their academic potential (Eilber, 1987). The NCSSM model was adopted in Louisiana, Illinois (Grades 10 to 12), Indiana, Alabama, Oklahoma, South Carolina, Mississippi, Arkansas, Georgia, Maine, and perhaps several other states. It eventually may be replicated in perhaps half of the states in the nation—with a number of variations, of course (Stanley, 1987).

There is another tradition, stemming from the University of Chicago before World War II. It is early entrance to college, either without yet having earned a high school diploma or by being a young high school graduate. When the support for such a program flagged at the University of Chicago, little Shimer College at Mt. Carroll, Illinois, founded in 1853, tried during the 1960s to fill the gap. It failed, but in 1964 Simon's Rock Early-Entrance

College of Bard College was created in Massachusetts solely to admit students a year or two shy of completing high school requirements. It has succeeded and has been followed by the Program for the Exceptionally Gifted of Mary Baldwin College (women only) in Staunton, Virginia (Stanley, 1995a), and the one-year Clarkson School of Clarkson University (Kelly, 1989) in Potsdam, New York. Nowadays, many colleges will admit students a year or two, or even more, younger than their typical first-year students (Brody & Stanley, 1991; Charlton, Marolf, & Stanley, 1994; Southern et al., 1993). Some do not require high school graduation.[2]

In 1988 the state-supported University of North Texas in Denton created a major new variant of early-entrance programs, the state-chartered Texas Academy of Mathematics and Science (TAMS; Stanley, 1991). About 200 highly selected boys and girls enter it after the 10th grade. They must reside in their own special residence hall on campus, have some restrictions because of their age, and take the most rigorous required set of college courses of perhaps any high school in the nation: two semesters each of biology, calculus, chemistry, and calculus-prerequisite physics and eight semesters of social science and humanities. To earn a TAMS (i.e., high school) diploma, they must complete all of these and several electives with a cumulative grade-point average of not less than 2.5. Then they may remain at the University of North Texas to complete their Bachelor's degree or transfer elsewhere as college juniors.

In the fall of 1995, state-supported University of West Georgia College in Carrollton began a more flexible, residential, early-entrance program (Stanley, 1995b). Students from anywhere enter after the 10th or 11th grade and complete the graduation requirements of their own high school in absentia solely via college courses.

The three types of programs (special nonresidential high schools, residential state high schools, and early-entrance college plans) appeal to somewhat different groups of talented youth. In our opinion, all are needed in order to provide the range of special educational opportunities those boys and girls sorely need and (we believe) richly deserve for their own educational and personal advancement and the good of the country. These plans, along with AP classes in high schools, seem to us to constitute some of the best possible "homogeneous grouping" and acceleration to raise the low academic ceiling of most regular high school curricula.

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[2]Johns Hopkins University's youngest gladuate ever, a high school graduate, was 15 years 7 months old in 1981 when he received the Bachelor's degree in physics with general and departmental honors and the physics prize (Stanley & Benbow, 1983). He is now a highly productive researcher.

Conclusion

By drawing on several lines of converging evidence, we have demonstrated that the achievement of America's brightest students has declined over the past three decades, lagging even further behind their counterparts in other nations. They are less well prepared academically today than they were a generation ago. Some feel that they are better at identifying how they feel about problems but not better at thinking about problems (Singal, 1991). Yet it is on the thinking about problems and arriving at solutions that societal progress is dependent. Individuals who can apply scientific ingenuity to alleviate human suffering and solve social problems are needed. Such persons are not just born. True, they are individuals born with strong propensities to learn and to develop intellectually at a high level; but they must also be nurtured and provided the educational opportunities required to develop optimally. Despite the importance of such opportunities, schools infrequently provide them. Most schools at best make slight provisions for gifted students; few provide well-formulated *programs*. Why?

The lack of attention or caring for America's brightest students is a result in large part to extreme egalitarianism, which presents itself in the form of six forces operating within American society and hence its schools: the pitting of equity against excellence rather than promoting both equity and excellence; anti-intellectualism; the dumbing-down of the curriculum; equating aptitude and achievement testing with elitism and avoiding their use; the attraction to fads; and the insistence of educators to teach all students from the same curriculum at the same level. These forces have led to a situation in which the precocious students are not being treated equitably; they simply are not provided with an appropriate education—an education that brings out their potential. This hurts bright students from minority or lower socioeconomic backgrounds the most, because their parents often cannot provide alternative educational experiences to compensate for their neglect by the system.

We have provided recommendations for creating positive change and hence a restoration of educational equity and a better balance between equity and excellence. The first recommendation involves underscoring the necessity of incorporating well-supported findings from psychology and education when developing educational policy (Cuban, 1990). Research repeatedly has shown that a one-size-fits-all mentality does not work; we need to be responsive to individual differences (Benbow & Lubinski, 1994). This is a principle derived from empirical research findings and consistent with social philosophy. Karl Marx said, "From each according to his abilities, to each according to his needs."

With respect to intellectually advanced students, this involves the adoption of accelerative strategies by schools, reaffirming the importance of

homogeneous grouping (not tracking) for instruction, and use of special high schools that embody the former two approaches. Acceleration and homogeneous grouping are the most effective known educational interventions on behalf of talented students. [Grouping is different from tracking (cf. Feldhusen & Moon, 1992)]. Neither has been empirically shown to harm any group of students; the evidence, indeed, is to the contrary. We believe that the evidence in support of acceleration and grouping (with a differentiated curriculum) for meeting the academic and socioaffective needs of intellectually precocious students is so compelling that it is simply malpractice for schools not to use these procedures appropriately.

One might assume that lack of financial resources prevents schools from meeting the academic needs of high potential children. Yet acceleration costs little if anything to adopt. It might actually save money. The principal requirement is administrative and curricular flexibility. If an effective medical treatment were withheld under such circumstances, we would be morally outraged. We ought to respond similarly when opportunities are withheld that prevent optimal psychological and intellectual development of a group of individuals. If we want talented individuals to be well prepared when society needs them, we need to be there for them when they need us. That is the mark of a humane, responsible, effective society.

The wisdom of John Gardner (1984) brings us to conclusion:

> *Extreme equalitarianism, or, as I would prefer to say, equalitarianism wrongly conceived—which ignores differences in native capacity and achievement and eliminates incentives to individual performance—has not served democracy well. Carried far enough, it means the end of that striving for excellence that has produced history's greatest achievements. (p. 30)*

"Let us take the discussion out of the hands of polarizers and build an educational system that serves each in terms of his or her talents, stretching each, challenging each, demanding of all the best that is in them." (p. 94)

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Detracking America's Schools
The Reform Without Cost?

By Dominic J. Brewer, the Rand Corporation, and Daniel I. Rees, and Laura M. Argys, University of Colorado

Ability grouping or tracking has long been used in public schools as an important method for organizing students, particularly at the high school level. It is seen as a way to narrow the range of performance and motivation in a group of students, thereby making teaching easier and preventing less able students from "holding back" those with greater academic talent. However, as concern over test scores, dropout rates, and related social ills has grown, tracking has become increasingly controversial. Opponents of the practice have argued that tracking stigmatizes students who are consigned to low-track classes with less experienced teachers, fewer resources, and lower expectations. Moreover, the detrackers maintain that average and even above-average students do not derive substantial academic benefits from being grouped together.[1]

The detracking bandwagon has gathered some steam. In her 1992 book, *Crossing the Tracks: How 'Untracking' Can Save America's Schools*, Anne Wheelock argued that detracking is a necessary component of successful school reform and detailed several experiments.[2] A recent Kappan article described the case against existing tracking practices as "compelling" and offered examples of practical ways in which detracking might actually be carried out.[3] The National Education Association has recommended that schools discontinue "conventional tracking practices"; the National Governors' Association has also endorsed detracking.[4] The "conventional wisdom" seems to have evolved into a belief that tracking is universally bad for low-ability students and neutral for other students. If this is true, the policy prescription is very clear: detrack. Everyone will gain, and no one will lose.

Our purpose here is not to pour cold water on detracking efforts or to argue that detracking is necessarily bad policy. Rather, we want to challenge the view that tracking can be ended with little or no cost. First, we revisit the previous research on the effects of tracking on student academic achievement and find remarkably little support for detracking efforts.

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Second, we present some findings of our own, based on analyses of nationally representative data and using current statistical techniques. Our estimates suggest that, while public high school students in low-track math classes do worse on standardized tests than they would have done had they been in an untracked class, students in high-track classes actually perform *better* academically. This suggests a less clear-cut policy prescription.

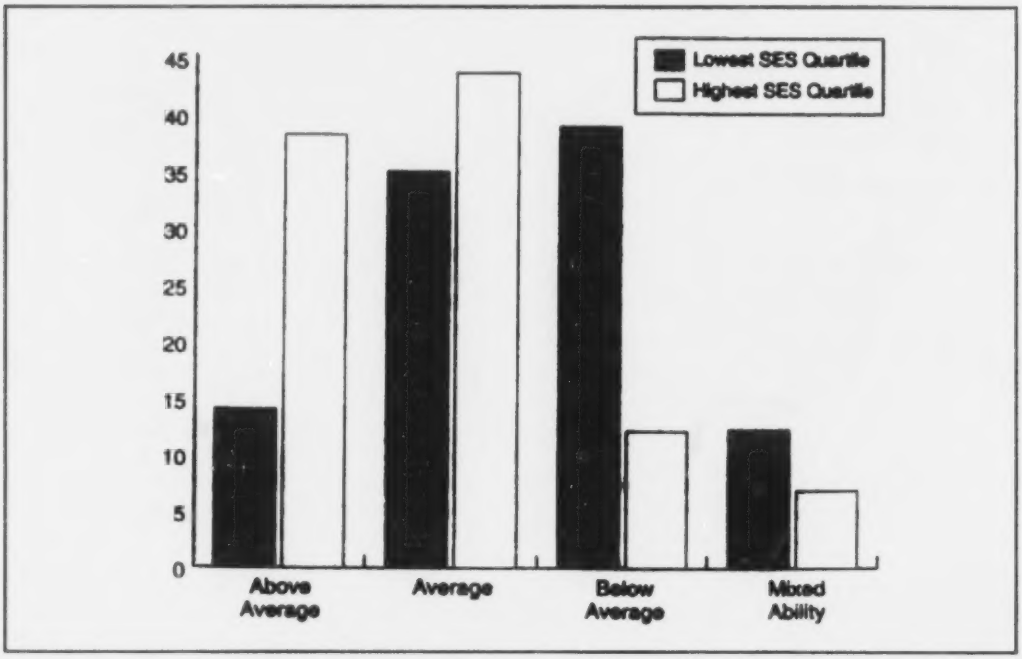
How Widespread Is Tracking?

Tracking is a pervasive phenomenon in American secondary schools. The National Educational Longitudinal Study of 1988 (NELS), a nationally representative student survey conducted by the National Center for Education Statistics (NCES), provides perhaps the best available picture of tracking practices.[5] In 1988 NELS sampled more than 20,000 eighth-grade students in more than 100 schools. Most of these students were resurveyed in the 10th and 12th grades in 1990 and 1992. The survey contains a range of questions dealing with student academic performance, family background, attitudes, and school experiences. Teachers, administrators, and parents were also surveyed. Indeed, NELS is unique in that it allows researchers to link a student with a particular class and teacher in a given subject area (mathematics, science, English, or social studies). Eighth- and 10th-grade teachers were asked about a number of classroom characteristics, including whether the class each student attended was composed of students of above-average, average, below average, or widely differing (heterogeneous) achievement levels relative to other students in the school.

Using the descriptive statistics from these responses and adjusting them for the particular composition of the NELS sample enables us to obtain nationally representative estimates of the extent of tracking.[6] Clearly, tracking is a widespread phenomenon.[7] Only 14.4% of eighth-grade students were enrolled in math classes that their teachers characterized as heterogeneous; 38.8% of students were in math classes that their teachers considered to be about average, 25.8% were in classes considered above average, and 20.9% were in classes considered below average. The percentages of students who were in classes in other subjects that teachers considered to be heterogeneously grouped were 15.7% for English and approximately 20% for science and social studies. Similarly, only 10.8% of 10th-grade math students in public schools were judged by their teachers to be in mixed-ability classes; 39.4% of students were in classes that their teachers considered to be about average, 24.6% were in classes considered above average, and 25.1% were in classes considered below average. The figures for heterogeneous grouping in other subjects were 11.6% for science, 17.7% for social studies, and 14.7% for English.

One of the major reasons that tracking has become unpopular has less to do with the outcomes the practice generates than with the types of

Figure 1.
Percentage of 10th-Grade Public School Students in Above-Average, Average, Below-Averag, and Mixed-Ability Math Classes, by Socioeconomic Status, 1990



Source: Daniel I. Rees, Laura M. Argys, and Dominic J. Brewer, "Tracking in the United States: Descriptive Evidence from NELS," *Economics of Education Review*, 1996.

students who tend to be assigned to the different tracks. A major concern is that tracking is used to segregate students on the basis of class and race, as well as ability. A great deal of research has been devoted to investigating whether family background is an important determinant of track placement.[8] Although evidence from past studies (which typically control for student ability and other factors) has been mixed, it is clear from the NELS data that, if one does not control for ability, there is a strong correlation between socioeconomic status and track and between race/ethnicity and track. For example, for 10th-grade math classes, only 14% of children in the lowest socioeconomic quartile are in classes judged to be above average, while almost 38% of those from the highest socioeconomic quartile may be found enrolled in such classes (see Figure 1).[9] Blacks and Hispanics are more likely to be placed in a class judged to be low track or in a mixed-ability class.[10]

The Conventional Wisdom

Perhaps the most influential review of tracking research was done by Robert Slavin.[11] After summarizing 29 separate studies at the secondary

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level, Slavin concluded that the effect of tracking on students of *any ability* was "essentially zero."[12] After reexamining this work, we have come to believe that such strong conclusions are unwarranted, for the following reasons. First, of the studies examined by Slavin, many (13) were unpublished dissertations, which, of course, were not subjected to independent peer review. Second, of the experimental studies, most used small samples, often taken from a single school. Third, of the nonexperimental studies, none used nationally representative data. Finally, with only one exception, all the studies examined were done prior to 1978.

Furthermore, the conventional wisdom that tracking does not have beneficial effects on student achievement has been undermined in more recent nonexperimental research that was based on large-scale data sets and that used more sophisticated statistical models. For example, Adam Gamoran and Robert Mare estimated that, after controlling for prior test scores, race/ethnicity, and socioeconomic status, high school seniors in the college-preparatory track scored approximately 8% higher on their mathematics exams than seniors in the non-college-preparatory track.[13] Similarly, Thomas Hoffer found that placement in an upper-track (rather than a heterogeneous) class for eighth- and ninth-grade math and science was associated with an increase in students' scores.[14] Placement in a lower-track class (rather than a heterogeneous class) was associated with an even larger decrease in students' scores.[15]

Of course evaluating the effects of tracking on student performance is problematic in both experimental and nonexperimental settings. Typically, experimental studies are poorly designed; there is a desperate need for *systematic, independent evaluations* of detracking experiments, but rarely are these carried out. Nonexperimental studies have, until recently, suffered from inadequate data. Student performance is related to a host of observable (and many unobservable and perhaps unmeasurable) individual, family, teacher, school, and community characteristics. If statistical models ignore some of these important factors, then biased results are likely. Early quantitative studies tended to suffer from this problem.

Two issues are worth highlighting. First, all previous research has failed to take account of the fact that *observable* teacher characteristics and other educational inputs, such as class size, vary across tracks. There is evidence to suggest that lower-track classes tend to be assigned to the least qualified teachers and, in general, tend to receive less than their share of educational resources. Similarly, upper-level classes seem to receive a disproportionately large share of resources.[16] If this pattern of allocation indeed exists, then it is obviously important to control for it in any effort to examine the effect of ability grouping on learning.

Second, since assignment to tracks is made at least in part on the basis of prior ability, any real attempt to measure the effect of tracking itself must disentangle the influence of tracking from the process of assignment. This is obviously difficult to do. It is likely that factors that researchers cannot

observe (e.g., student motivation) that are correlated with student performance also help determine the track to which a student is assigned. While statistical techniques exist to get around this problem, only the most recent studies have used them.

Some New Evidence

We recently undertook a study of the effects of tracking using a sample of students taken from the NELS data. The research was funded by the National Center for Education Statistics[17] and focused on public school students' academic achievement as measured by standardized test scores in mathematics.[18]

Specifically, we examined the effect of 10th-grade tracking on end-of-year 10th-grade achievement in mathematics for a sample of more than 3,900 public school students. Class-specific information was provided by each student's mathematics teacher.[19] It should be emphasized that these measures are not based on student self-reponse and refer to a specific math class. One drawback to much of the previous work in this area is the use of student self-response in order to measure track placement.[20]

We reexamined the impact of tracking on high school student achievement through the estimation of standard "education production functions" for students in each type of class: above average, average, below average, and mixed ability.[21] This involved using regression analyses to explain variation in student test scores on the basis of a set of explanatory factors. Variables at the individual level included the student's sex, race/ethnicity, socioeconomic status, and eighth-grade mathematics test score.[22] Classroom-level characteristics included class size, teacher experience, teacher certification, teacher absenteeism, and teacher education—all of which are likely to be correlated with both student achievement and class track. In fact, our data confirmed the proposition that high-track classes received more educational resources than low-track classes. For example, students in above-average math courses tended to be taught by more experienced teachers than students in either below-average or heterogeneous classes and were more likely to be taught by a teacher with a master's degree.

Our statistical models took into account what statisticians call "sample selection bias." If there are unobserved student or school characteristics that affect both achievement and track placement, then any association between achievement and tracking may stem from these characteristics. Failure to explicitly model the process through which students are assigned to a particular track may therefore lead to erroneous conclusions about the true relationship between tracking and student achievement. Following previous research,[23] we modeled track placement as a function of prior (eighth-grade) achievement and such student characteristics as race/ethnicity and socio-economic status.

Finally, we used the estimates of our achievement models to calculate the *predicted* test score for each individual in our sample had he or she been placed in each of the four tracks, and we found that tracking was an important determinant of student achievement. For example, if our entire sample had been placed in heterogeneous classes, the average test score was predicted to be 63.36 on a 100-point scale. The average 10th-grade mathematics score associated with the placement of all students in average classes was predicted to be 65.30; in below-average classes, 58.29; and in above-average classes, 68.93.

By comparing the predictions for the various tracks with those for heterogeneous grouping, we were able to assess the impact of tracking. Placement in a below average math class, as compared to a heterogeneous one, was associated with a decrease in achievement of approximately five percentage points. Placement in an above-average math class was associated with an achievement increase of roughly the same magnitude. And placement in an average class was associated with an increase of somewhat less than two percentage points.[24]

These results suggest that detracking would create winners and losers. Although students in lower tracks would realize achievement gains by being placed in a heterogeneous class, this gain would be at the expense of students placed in higher-level tracks. Our estimates imply that detracking all students currently enrolled in homogeneous classes would produce a net 1.7% drop in the average mathematics test score.[25]

Implications

The conventional view that detracking has few costs in terms of student performance may be too optimistic. Our study, which used nationally representative survey data and statistical models that control for both track assignment and classroom characteristics, clearly suggests that this is not the case.

However, our analysis should not be interpreted as an argument against detracking as part of an education reform program. For example, tracking may affect such educational outcomes as self-esteem, dropout rate, and the likelihood of going to college, and our results need to be considered with this limitation in mind. In addition, "detracking" is not a monolithic strategy; the way in which detracking is carried out may well be as important as the policy itself.[26] We merely wish to highlight the fact that the conventional wisdom on which detracking policy is often based—that students in low-track classes (who are drawn disproportionately from poor families and from minority groups) are hurt by tracking while others are largely unaffected—is simply not supported by very strong evidence. Furthermore, it is worth stressing again that it is not only our own work

that suggests a more complex picture; several other recent analyses have come to similar conclusions.

While our research, which we believe uses better data and improved statistical techniques than previous efforts, suggests that there may be a small overall gain in efficiency associated with ability grouping, it also raises an erquity issue: tracking clearly exacerbates the achievement gap between low- and high-ability students. It would seem, then, that policy makers are left with a difficult choice. There is clearly a case for detracking on equity grounds; however, as a result, students currently in upper-track classes may suffer major losses in achievement test scores.

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[1]Jomilla H. Braddock and Robert E Slavin, "Why Ability Grouping Must End: Achieving Excellence and Equality in American Education," *Journal of Intergroup Relations*, vol. 20, 1993, pp. 51-64.

[2]Anne Wheelock, *Crossing the Tracks: How 'Untracking' Can Save America's Schools* (New York: New Press, 1992).

[3]Richard S. Marsh and Mary Anize Raywid, "How to Make Detracking Work," Phi Delta Kappan, December 1994, pp. 314-17.

[4]Jeannie Oakes, "Can Tracking Research Inform Practice? Technical, Normative, and Political Considerations," *Educational Researcher*, May 1992, p. 17; and Laura Mansnerus, "Should Tracking Be Derailed?," *Education Life*, special supplement, *New York Times*, 1 November 1992, p. 15.

[5]National Center for Education Statistics, *First Follow-Up: Student Component Data File User's Manual* (Washington, D.C.: U.S. Department of Education, 1992).

[6]In particular, these descriptive statistics are adjusted using NCES population weights that are specifically designed to enable researchers to generalize from the NELS sample to the U.S. population as a whole. More detailed descriptive statistics on the extent of tracking and detailed breakdowns by race, ethnicity, and socioeconomic status can be found in Daniel I. Rees, Laura M. Argys, and Dominic J Brewer, "Tracking in the United States: Descriptive Evidence from NELS," *Economics of Education Review, 1996*.

[7]Jeannie Oakes estimated that approximately 80% of secondary school math and science classes (as opposed to students) were tracked in the mid-1980s. See Jeannie Oakes, *Multiplying Inequalities: The Effects of Race, Social Class, and Tracking on Opportunities to Learn Math and Science* (Santa Monica, Calif.: RAND Corporation, 1990), p. 20.

[8]Recent work in this area includes Aage B. Sorensen, "The Organizational Differentiation of Students in Schools as an Opportunity Structure," in Maureen T. Hallinan, ed., *The Social Organization of Schools: New Conceptualizations of the Learning Process* (New York: Plenum Press 1987), pp. 103-129; Adam Gamoran, "The Variable Effects of High School Tracking," *American Sociological Review*, December 1992, pp. 812-128; and Adam Gamoran and Robert G. Mare, "Secondary School Tracking and Educational Inequality: Compensation, Reinforcement, or Neutrality?," *American Journal of Sociology*, March 1989, pp. 1146-1183.

[9]For similar data on eighth-graders, see Jomilla H. Braddock and Marvin P. Dawkins, "Ability Grouping, Aspirations, and Attainments: Evidence from the National Educational Longitudinal Study of 1988," *Journal of Negro Education*, vol. 62, 1993, pp. 324-336.

[10]In our own statistical analyses, in which we hold student ability and other factors constant, we find that socioeconomic status continues to play a major role in track placement. However, race is generally

not a statistically significant predictor of track assignment when other factors are controlled.

[11]Robert E. Slavin, "Achievement Effects of Ability Grouping in Secondary Schools: A Best-Evidence Synthesis," *Review of Educational Research*, vol. 60, 1990, pp. 471-99.

[12]Ibid., p. 484.

[13]Gamoran and Mare, op. cit.

[14]Thomas B. Hoffer, "Middle School Ability Grouping and Student Achievement in Science and Mathematics," *Educational Evaluation and Policy Analysis*, Fall 1992, pp. 205-227.

[15]Placement in an upper-track class was associated with an increase in ninth-grade mathematics test scores of as much as 5% over placement in a heterogeneous class; placement in a lower-track class was associated with a decrease in scores of as much as 6.4%.

[16]Oakes, "Can Tracking Research Inform Practice?" pp. 15-16.

[17]The technical details of the study and its findings may be found in Laura M. Argys, Daniel I. Rees, and Dominic J. Brewer, "The Impact of Ability Grouping on High School Student Achievement: Evidence from NELS," National Center for Education Statistics, U.S. Department of Education, Washington, D.C., 1995.

[18]Although test scores in other subject areas are available in NELS, much of the recent work examining track assignment and the effect of tracking on student achievement has been focused on mathematics scores. In addition, it has been argued that family background is the primary determinant of verbal ability, whereas schools play a greater roles in such areas as math and science. See, for example, George F. Madaus et al., "The Sensitivity of Measures of School Effectiveness," *Harvard Educational Review*, May 1979, pp. 207-230.

[19]Specifically, teachers were asked, "Which of the following best describes the achievement level of the eighth- [10th-] graders in this class compared with the average eighth- [10th-] grade student in the school? Higher achievement levels, average achievement levels, lower achievement levels, or widely differing achievement levels?" Of course, one cannot assume that every teacher in the sample interpreted this question in exactly the same manner. However, this was the only method of distinguishing between heterogeneous and tracked classes, and other research has relied on similar tracking measures (see Oakes, *Multiplying Inequalities*) There is also evidence that teacher perceptions with regard to the homogeneity of classes closely correspond to information provided by school administrators (see Robert E. Slavin et al., *Alternatives to Ability Grouping* [Baltimore: Center for Research on Effective Schooling for Disadvantaged Students, 1989]). Tenth-grade teachers were also asked, "Which of the following best describes the 'track' this class is considered to be? Academic, advanced or honors, general, vocational/technical/business, or other?" By combining the vocational and other responses to this latter question, two sets of track measures, each with four categories, were constructed. The results for this measure may be found in Argys, Rees, and Brewer, op. cit.

[20]See, for example, Gamoran and Mare, op cit.; and Gamoran, op cit. Student perceptions of track placement have been shown to be unreliable. See James E. Rosenbaum, "Track Misperceptions and Frustrated College Plans: An Analysis of the Effects of Tracks and Track Perceptions in the National Longitudinal Survey," *Sociology of Education*, April 1980 pp. 74-88. Samuel R. Lucas and Adam Gamoran replicated the track assignment analysis of Gamoran and Mare's study, using information from actual school transcripts. The results changed substantially. See Samuel R. Lucas and Adam Gamoran, "Race and Track Assignment: A Reconsideration with Course-Based Indicators of Track Locations" working paper, University of Wisconsin, Madison, 1993.

[21]For a discussion of the conceptual and methodological problems associated with this approach, see Eric Hanushek, "Conceptual and Empirical Issues in the Estimation of Education Production Functions," *Journal of Human Resources*, vol. 14, 1979, pp. 351-388 and Ronald G. Ehrenberg and Dominic J. Brewer, "Do School and Teacher Characteristics Matter? Evidence from High School and Beyond," *Economics of Education Review*, vol. 13, 1994, pp. 1-17. A summary of "production function" research can be found in Eric Hanushek, "The Impact of Differential Expenditures on

School Performance," *Educational Researcher*, May 1989, pp. 45-62. A recent example of this approach using NELS data can be found in Ronald G. Ehrenberg, Dan D. Goldhaber, and Dominic J. Brewer, "Do Teachers' Race, Gender, and Ethnicity Matter? Evidence from NELS-88," *Industrial and Labor Relations Review*, April 1995, pp. 547-561.

[22]Students in the NELS data were tested in the spring of their eighth- and 10th-grade years. Unfortunately, no ninth-grade information is available. We assume, therefore, that the effect of eighth-grade inputs on the educational process are captured through the inclusion of eighth-grade achievement in our models.

[23]Sorensen, op. cit.; Gamoran and Mare, op. cit.; Lucas and Gamoran, op. cit.; and Michael S. Garet and Brian Delaney, "Students, Courses, and Stratification," *Sociology of Education*, April 1988, pp. 61-77.

[24]These estimates are statistically significant at conventional levels. That is, we can be at least 95% certain that the differences are not a matter of chance.

[25]This 1.7% figure is marginally statistically insignificant ($p < .13$). [26]For example, detracking need not mean students are taught entirely in heterogeneous classes. Rather, there could be a mix between grouped and ungrouped classes, allowing high-ability children to interact with their peers and to assist lower-ability students in co-operative learning situations.

[27]For example, detracking need not mean students are taught entirely in heterogeneous classes. Rather, there could be a mix between grouped and ungrouped classes, allowing high-ability children to interact with their peers and to assist lower-ability students in co-operative learning situations.

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Detracking and Its Detractors
Flawed Evidence, Flawed Values

By Robert E. Slavin Center for Research on the Education of Students Placed at Risk, Johns Hopkins University

Studies of the achievement effects of ability grouping are one of the oldest traditions in educational research. These studies have been published since the early days of this century, and they continue unabated today. With few exceptions, the results of these studies have been remarkably consistent. However, I am aware of not one, but two sets of conflicting results, each of which is consistent within its own methodology.

The problem is that there are two very different types of studies of this topic. I would call them high-track/low-track comparisons and track/no-track comparisons. High-track/low-track studies compare the achievement of students assigned to high, middle, and low tracks or ability groups, controlling for pretest scores, I.Q., and other indicators of initial ability or performance. Track/no-track studies, in contrast, compare students in ability-grouped classes to students of similar ability levels in heterogeneous classes.

As I noted in my 1987 and 1990 reviews of the literature in this area,[1] the high-track/low-track studies almost invariably conclude that students gain from being in high-ability groups and lose from being in low-ability groups. Track/no-track studies, on the other hand, find that the achievement effects of ability grouping are near zero for high, average, and low achievers. Note that both types of studies agree on the net effect of ability grouping —zero—but disagree only on whether there are markedly different effects for high- and low-track students.

In my 1990 review I discussed the flaw in the high-track/low-track studies. These studies are comparing children with substantially different pretest or I.Q. scores and then attempting to control for those differences. This makes no sense, either statistically or logically. Imagine that someone did an experiment in which students in a gifted class (mean I.Q. = 130) played tiddlywinks every day, while those in a control group (mean I.Q. = 100) did not. At the end of the year, math scores for the two classes were compared, controlling for I.Q. It is almost certain that the tiddlywinks group would score far better *even after* controlling for I.Q. The problem is that

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statistical controls just don't work when the groups being compared are far apart on covariates (control variables) that are strongly related to outcomes.[2] Even if you didn't know this, however, would you believe that tiddlywinks was an effective treatment given the enormous pretest difference? Would any journal accept this study? Of course not.

Broken down to its essentials, the study by Brewer, Rees, and Argys is a somewhat more sophisticated version of the tiddlywinks study.[3] They compare 10th-graders in high-, average-, and low-ability math classes, controlling for a large number of inputs, including eighth-grade test scores. When they were in eighth grade, 10th-graders in the high-ability classes had scored about two standard deviations higher than those in the low-ability group. Two standard deviations translates into an equivalent I.Q. difference of 30 points, a difference on the SAT math scale of about 200 points, or a difference in normal curve equivalents (NCEs) of about 42. No statistical methods can effectively control for such a huge difference.

The NELS data used by Brewer, Rees, and Argys does contain a small group of students whose teachers described their math classes as having "widely differing achievement levels." The pretest scores for these students were halfway between those of the high- and low-ability groups, about one standard deviation from each (equivalent to 15 I.Q. points, 100 SAT points, or 21 NCEs). Again, it is statistically and logically impossible to control for such a large difference.

However, this comparison is also problematic for another reason. I personally know of very few 10th-grade math classes that are totally heterogeneous. Yet NELS found 10.8% of 10th-grade classes to be fully heterogeneous (by their teachers' reports). Some of these classes are certainly in very small schools that have only one or two classes at each grade level. However, reports of other heterogeneous classes may come from teachers who misunderstood the question. For example, a school might have 10th-graders in geometry, algebra II, algebra I, and math 10, but it might not group by ability within the types of classes. Alternatively, a school might allow children a choice of ability-group levels, so that a few high achievers in low ability classes or low achievers in high ability classes would cause a teacher to report "widely differing" levels. In these and other cases, a teacher might report his or her class as heterogeneous.

Because of the problems of statistical control, of comparing apples and oranges, and of a frequent failure to take into account what grouping practices were actually in use in the schools whose teachers responded to a questionnaire, I believe that the high-track/low-track studies are not convincing evidence.

The experimental track/no-track studies are far more meaningful. In these, experimenters typically knew for sure that grouped and ungrouped students were equivalent at the pretest, and they knew for sure what grouping plan was actually implemented. Among such studies, it is difficult

to find even a single instance of important gains for students in the high-ability groups. In my 1990 review, I found a median effect size of essentially zero for high achievers.[4] Of 15 randomized or matched experimental studies, not one found effect sizes in excess of .25 in favor of ability grouping for high achievers; in contrast, three studies found effect sizes larger than this in favor of heterogeneous grouping for high achievers. However, most found differences very close to zero.

Frankly, whether you accept the conclusions of Brewer, Rees, and Argys or my own, the practical implications are not terribly different. In either case, no one could argue that ability grouping is beneficial to students in general. Recommendations for untracking strategies uniformly reject the idea of simply teaching to the middle in heterogeneous groups.[5] Instead, they recommend holding standards high but providing a wider variety of ways for children to achieve these standards. It is fair to say that the jury is still out on how such untracking programs will work in practice, but there is little basis for the fear that they will be detrimental to the performance of high achievers.

Lacking any evidence that ability grouping is beneficial for students in general, it is important to ask how we can justify this practice. Ability grouping by its nature works against democratic and egalitarian norms, often creates racial or ethnic divisions, risks making terrible and long-lasting mistakes, and condemns many children to low-quality instruction and low-quality futures. If there were a strong educational justification for ability grouping, the situation might be different, but even accepting at face value the data put forth by Brewer, Rees, and Argys would provide little compelling reason to maintain ability grouping. Let's work toward schools that can do a better job with all of our children.

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[4] Robert E. Slavin, "Ability Grouping and Student Achievement in Elementary Schools: A Best-Evidence Synthesis," *Review of Educational Research*, vol. 57, 1987, pp. 347-350; idem, "Achievement Effects of Ability Grouping in Secondary Schools: A Best-Evidence Synthesis," *Review of Educational Research*, vol. 60, 1990, pp. 471-499; and idem, "Are Cooperative Learning and Untracking Harmful to the Gifted?" *Educational Leadership*, March 1991, pp. 68-71.

[5] See Charles S. Reichardt, "The Statistical Analysis of Data from Nonequivalent Group Designs," in Thomas C. Cook and Donald T. Campbell, eds., *Quasi-Experimentation: Design and Analysis Issues for Field Settings* (Chicago: Rand McNally, 1979).

[6] The article that appears in this issue of the *Kappan* draws on data presented in a technical report by Laura M. Argys, Daniel I. Rees, and Dominic J. Brewer, "The Impact of Ability Grouping on High School Student Achievement: Evidence from NELS," National Center for Education Statistics, U.S. Department of Education, Washington, D.C., 1995.

[7] Effect size is the difference between experimental and control group means, divided by the control group standard deviation.

"See, for example, James Bellanca and Elizabeth Swartz, eds., *The Challenge of Detracking* (Palatine, Ill: IRI/Skylight, 1993); Paul George, *How to Untrack Your School* (Alexandria, Va: Association for Supervision and Curriculum Development, 1992); Richard S. Marsh and Mary Anne Raywid, "How to Make Detracking Work," *Phi Delta Kappan*, December 1994, pp. 314-317; Jeannie Oakes et al., "Creating Middle Schools: Technical, Normative and Political Considerations," *Elementary School Journal*, vol. 93, 1993, pp. 461-480; Anne Wheelock, *Crossing the Tracks: How 'Untracking' Can Save America's Schools* (New York: New Press, 1992); and Harbison Pool and Jane A. Page, eds., *Beyond Tracking: Finding Success in Inclusive Schools* (Bloomington, Ind: Phi Delta Kappa Educational Foundation, 1995).

The Reform Without Cost? A Reply to Our Critics

By Dominic J. Brewer, Daniel I. Rees, and Laura M. Argys

In recent years a number of reformers have advocated detracking America's schools, arguing that students currently in the lower tracks would benefit and that there would be little or no effect on other students' academic performance.[1] In our article in the November *Kappan*, we argued that this "conventional wisdom" is overly optimistic. The basis for our position was a review of previous studies of the effects of tracking and some new evidence of our own.

Our study, which used recent nationally representative survey data and statistical models that controlled for both track assignment and classroom characteristics, found that detracking creates both winners and losers.[2] Specifically, we estimate that detracking would lead to an 8.7% increase in the mathematics scores of individuals in classes composed of below-average students and an 8.1% decrease in the scores of students in above-average classes. The net effect, if all students in our sample were placed in heterogeneous classes, would be a 1.7% decline in average scores in mathematics.

Since outcomes other than student achievement may be important, since detracking is hardly a monolithic strategy, and since society may legitimately judge equity concerns to be paramount, we did not make policy recommendations about the future of tracking based on our study. While we believed our results to be strong, our purpose was not to pour cold water on detracking efforts or to argue that detracking might not be a valuable part of an education reform strategy. Rather we wanted to challenge the view that tracking can be ended with little or no cost. Nothing in the comments on our article by James Gallagher, Richard Jaeger and John Hattie, or Robert Slavin leads us to different conclusions. Their responses vary from qualified agreement with our findings (Gallagher) to outright rejection (Slavin). Here, we take the opportunity briefly to examine their comments.

Gallagher and the Importance Of the Curriculum

The main thrust of Gallagher's response to our article concerns the curriculum experiences that students receive. He asserts that the "true

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policy question" is, "Should students, regardless of their past performance or current aptitude or vocational interests, be receiving identical curricular experiences in secondary education?" A similar point is made by Hattie and Jaeger in their comments: "We have little assurance, then, that the differences in mathematics performance reported by Brewer. Rees. and Argys should be regarded as the effects of ability grouping rather than as the effects of differing mathematics curricula." We agree that this is an important issue.

It is likely that our estimates of the effects of "tracking" are picking up the effects of both curriculum differentiation and class composition. In the real world these factors go hand in hand. and it is difficult, if not impossible, to try to separate them. The very act of tracking allows students to be better matched to a curriculum suited to their needs. Teachers know that it is much easier to target specific curricula to homogeneous ability groups, which was one of the reasons tracking was instituted in the first place. The debate over the appropriate mathematics curricula the students in grades eight through ten is clearly a critical one and detrackers seem to be divided among themselves as to what the curriculum should look like in a detracked world.

The "additional design issues" relating to our technical analyses that Gallagher raises do not amount to much. The NELS mathematics tests were designed by the Educational Testing Service to assess cognitive skills, and our sample consisted of only those students taking math in both eighth and 10th grades. The same mathematics test was given to all students in the eighth grade, but several versions of a test that differed in their difficulty levels were administered in the 10th grade. Which version was given to each 10th-grade student was determined by his or her score on the eighth-grade mathematics test. The purpose of this multilevel design of the 10th-grade test was to guard against "ceiling" and "floor" effects.

The tests were explicitly made compatible by the designers of NELS through the use of Item Response Theory (IRT). IRT is a method that uses the pattern of right, wrong, and omitted responses to the questions administered on each test and the difficulty, discriminating ability, and "guessability" of each question to place each student on a continuous scale, regardless of the test he or she was given. A core of items shared among the different test forms makes it possible to establish a common scale. Therefore, Gallagher's concern about the test metric is unwarranted.

Why We Should Care About Tracking: Jaeger and Hattie

Jaeger and Hattie begin their response by asking three questions about our work: Are our interpretations warranted? Are our results consistent with

the literature? What should we make of our results from a policy perspective?

On the first question, Jaeger and Hattie voice some doubt about the accuracy of our measure of ability grouping. (Slavin expresses similar sentiments with regard to "heterogeneous" groups.) In our November article and elsewhere, we indicated our own concerns about the measurement of tracking.[3]

There are at least four reasons why we have confidence in our findings. First, Thomas Hoffer, in his 1992 study of the achievement effects of ability grouping, carefully constructed tracking measures based on information from teachers, students, and school administrators; his finding that high-ability students benefit from tracking while low ability students are hurt is quite consistent with our results.[4] Second, Jeannie Oakes, one of the leading advocates of detracking, has used a similar measure.[5] Third, our full study included two measures of tracking, one based on teachers' assessment of the homogeneity of ability in their classes, and one based on a formal "academic/honors/general/vocational" distinction. Neither measure of tracking is ideal, but our results indicate similar losses in achievement if academic/honors students are placed in the general track (and similar gains in achievement if vocational track students are placed in the general track). Fourth, our study—unlike many previous studies of tracking—does not use self-reported student perceptions of track placement, as these have been shown to be unreliable.[6]

Jaeger and Hattie also suggest that we might have more appropriately used "hierarchical modeling" in our study, a technique currently in vogue within some educational research circles but one that has not penetrated other disciplines such as economics. This is not the place to engage in a debate over the technical merits of alternative modeling strategies. Suffice it to say that we believe that a model for estimating the effects of tracking on individual students that adequately controls for selection effects is the appropriate approach.

On the second and third questions, Jaeger and Hattie's argument revolves around the observation that the effects of ability grouping, as indicated in several "meta-analyses," are very small, perhaps one-fifth of a standard deviation in student achievement. The fact that our average result is consistent with their finding leads them to the conclusion that "the effects of ability grouping are trivial."

We agree wholeheartedly that the overall effect of tracking is small (though we have some concerns about using meta-analysis to reach this conclusion).[7] But this average effect was not the focus of our main argument—the important point was that high-ability students gain from tracking and low-ability students lose. Thus to claim that, because the overall effect is small, tracking is not a particularly important policy when compared to other reforms is simply fallacious. Tracking has clear and

sizable effects that exacerbate the ability gap between high- and low-ability students. Policy makers cannot duck the tradeoff that is implied: low-ability students would gain from detracking, but high ability students would lose. Judgments about whether detracking is a more or less important policy than, say, reforming teacher education were not an issue in our article.

Slavin and the Tiddlywinks Phenomenon

The harshest of our critics is Robert Slavin. His article, "Detracking and Its Detractors: Flawed Evidence, Flawed Values," questions our study's methodology and the inferences we draw for educational policy. We discuss each of these points in turn.

Slavin's basic argument regarding our current work and our reassessment of the previous literature on tracking hinges on the notion that there are two types of tracking studies, what he calls "high-track/low-track comparisons" and "track/no-track comparisons." The former studies typically compare achievement of students assigned to high, middle, and low tracks, while the latter "compare students in ability-grouped classes to students of similar ability levels in heterogeneous classes."

Slavin characterizes our study as being of the high-track/low-track variety, an approach that he claims is seriously flawed because attempts to control for differences in pretest scores "just don't work when the groups being compared are far apart on covariates (control variables) that are strongly related to outcomes." Slavin illustrates his point as follows. "Imagine that someone did an experiment in which students in a gifted class (mean I.Q. = 130) played tiddlywinks every day, while those in a control group (mean I.Q. = 100) did not. At the end of the year math scores for the two classes were compared, controlling for I.Q. It is almost certain that the tiddlywinks group would score far better even after controlling for I.Q." In the case of our study, Slavin claims that differences in eighth-grade test scores between high-track and low-track classes (and between high/low classes and heterogeneous classes) are simply too great to be adequately controlled for in our statistical models.

There are several major problems with Slavin's argument. First, it is wrong on statistical grounds. As far as we can tell, the basic rationale for his view can be traced back to Donald Campbell and was discredited long ago.[8] Like Slavin, Campbell suggested that the effect of participation in a particular educational program could be ascertained only for individuals who were similar to those chosen for the program. Yet Burt Barnow, Glenn Cain, and Arthur Goldberger have shown that this view is based on a "misunderstanding" and that the effects of program participation can easily be estimated for an entire population.[9] If the control variable claim were

true, it would invalidate literally hundreds of published education production function studies.

Second, implicit in the tiddlywinks example is the notion that somehow we attach some importance to the absolute 10th-grade score. In fact, we do not. Our models are essentially the same as those which estimate the determinants of students' "gain" scores, i.e., how much is learned between eighth grade and 10th grade.[10] Suppose that the students placed in the high-track math class played tiddlywinks all day, while students in the low-track class studied math. Then we would expect the tiddlywinks group to learn nothing—their gain score would be zero. Students placed in the low track would typically have positive gains. Placement in the lower track is then associated with a gain, despite the fact that students in the high track started out (and may have finished) with a higher absolute score. In our model, it's the gain that counts, not the level. Further, as noted above, the NELS tests are explicitly designed to remove ceiling and floor effects.

Third, we do not in fact compare high-, middle-, and low-ability students in our study; rather, we compare high-, low-, and middle-grouped students with those in heterogeneous classes. Slavin therefore appears to be extending his earlier critique because he claims that the heterogeneous students are not in truly heterogeneous classes.[11] In fact, there is considerable overlap between achievement levels of above- and below-average students in tracked groups and those in heterogeneous classes. We are not comparing apples and oranges at all.

Fourth, both high-track/low-track studies and track/no-track studies have their flaws, yet Slavin is remarkably silent as to the problems of the latter type of study. Track/no-track studies are typically experimental and are often very small scale. Given the link between curriculum differentiation and ability grouping, these studies capture the effects only of the composition of the classroom and not of the curriculum.[12]

The Policy Dilemma

It is worth stressing that we are neither opponents nor advocates of detracking. Our results point out that policy makers face a tradeoff between helping low-achieving students and hurting high-achieving ones. We made no mention of our own personal beliefs about the efficacy of detracking; our own values are irrelevant in this context.

Our results raise a fundamental dilemma for educators and policy makers who are grappling with ways to improve the nation's schools. Detracking creates winners and losers. If one believes that there is a link between academic achievement and economic productivity, then it might

be argued that tomorrow's entrepreneurs and wealth creators would be "held back" in a detracked world, potentially reducing national income. In this sense, tracking could represent an efficient public policy from an economic standpoint.

On the other hand, from a Rawlsian perspective, detracking clearly makes sense.[13] The least-advantaged students benefit significantly from detracking, and it is on this gain that society should focus when it decides the relative merits of the policy. Other, less stringent notions of equity also suggest that policy makers need to be concerned with the overall distribution of educational achievement, not just the "net" effect A realistic assessment of the equity effects of detracking, however, cannot be made without knowing about the longer term social benefits of increasing the academic achievement of low-ability students. For example, raising the achievement levels of students currently in the lower tracks could conceivably increase economic mobility, decrease crime, and alleviate the growing gap between rich and poor in the United States.

Whether to detrack, then, depends on how we as a society weigh these competing notions of equity and efficiency. We can all agree with Slavin's parting admonition, "Let's all work toward schools that can do a better job with *all* of our children." Such statements, however, cannot paper over the important differences that arise in the process of interpreting studies such as ours that find mixed evidence for detracking. There is no obviously preferred path, but detracking is clearly not a costless solution to the problems facing America's schools.

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[1]See, for example, Anne Wheelock, *Crossing the Tracks: How 'Untracking' Can Save America's Schools* (New York New Press, 1992)

[2]Our results are reponed in Laura M Argys, Daniel I. Rees, and Dominic J. Brewer, "The Impact of Ability Grouping on High School Achievement: Evidence from NELS," National Center for Education Statistics, U S. Department of Education, Washington, D.C., 1995; and Daniel I. Rees, Laura M. Argys, and Dominic J. Brewer, "Tracking in the United States: Descriptive Evidence from NELS," *Economics of Education Review*, vol 15, 1996.

[3]Argys, Rees, and Brewer, op. cit., and Rees, Argys, and Brewer, op. cit.

[4]Thomas B. Hoffer, "Middle School Ability Grouping and Student Achievement in Science and Mathematics," *Educational Evaluational and Policy Analysis*, vol. 14, 1992, pp. 205-227.

[5]Jeannie Oakes, *Multiplying Inequalities: The Effects of Race, Social Class, and Tracking on Opportunities to Learn Math and Science* (Santa Monica, Calif.: RAND Corporation, 1990). Slavin also suggests that there is evidence that teacher perceptions with regard to class homogeneity closely correspond to information provided by school administrators. See Robert E. Slavin et al., *Alternatives to Ability Grouping* (Baltimore: Center for Research on Effective Schooling for Disadvantaged Students, Johns Hopkins University, 1989).

[6]See Janet E. Rosenbaum, "Track Misperceptions and Frustrated College Plans: An Analysis of the Effects of Tracks and Track Perceptions in the National Longitudinal Survey," *Sociology of Education*, April, 1980, pp. 74-88.

[7]"Meta-analysis" takes numerous forms and rests on a set of underlying assumptions that are often not met. Some of the weaknesses of the approach are pointed out in Eric A. Hanushek, "Money Might Matter Somewhere: A Response to Hedges, Laine, and Greenwald," *Educational Researcher*, May 1994, pp. 5-8.

[8]Slavin cites Charles S. Reichardt, "The Statistical Analysis of Data from Nonequivalent Group Designs," in Thomas C. Cook and Donald T. Campbell, eds., *Quasi-Experimentation: Design and Analysis Issues for Field Settings* (Chicago: Rand McNally, 1979), pp. 147-205, as the basis for the view that when the range of a covariate is large it is an inadequate control. Campbell's original work is in Donald T. Campbell, "Reforms as Experiments," *American Psychologist*, April 1969, pp. 409-29; and Donald T. Campbell and Albert Erlenbacher, "How Regression Artifacts in Quasi-Experimental Evaluations Can Mistakenly Make Compensatory Education Look Harmful," in Jerome Hellmuth, ed., *Compensatory Education: A National Debate*, vol. 3 (New York: Bruner/Mazel, 1970), pp. 185-210.

[9]The argument concerning the range of control variables is shown to be incorrect in Bun S. Batnow, Glen C. Cain, and Arthur S. Goldberger, "Issues in the Analysis of Selectivity Bias," *Evaluation Studies Review*, vol. 5, 1980, pp. 41-49. See also Hoffer, p. 208.

[10]This is true algebraically and statistically. One can estimate either a model in which the 10th-grade test score is regressed on a set of covariates and the eighth-grade test score or one in which the gain score (difference between 10th- and eighth-grade scores) is regressed on the same covariates and the eighth-grade score. The estimated coefficients of the covariates are identical whether the 10th-grade or gain scores are used as dependent variables.

[11]Roben E. Slavin, "Achievement Effects of Ability Grouping in secondary Schools: A Best-Evidence Synthesis," *Review of Educational Research*, vol. 60, 1990, pp. 471-499.

[12]This point is also made by Hoffer: "Experimental studies of the effects of grouping restrict the 'treatment' to a narrow range of its real manifestations and thus negate the differential effects found in the observational studies" (p. 209).

[13]See John Rawls, *A Theory of Justice* (Cambridge, Mass.: Harvard University Press, 1971).

Special Classes for Gifted Students? Absolutely!

By Sally Burton-Szabo

I believe having classes for gifted students is important and necessary. Special classes for these students will teach them how to use their creativity and how to organize, and will encourage and stimulate interaction between similar gifted students. Students will be able to work at their level, which may be advanced from their peers, use their creativity in unique ways, and have a teacher who understands their particular needs. As a teacher of nine years in a variety of grade levels, I have had many experiences with many programs including inclusion of the gifted and other special education students.

This past year I taught an honors English and reading program at the seventh grade level, and I believe my students were able to accomplish a lot more work, use their creativity more, have more freedom, and produce more completed projects because they were with their intellectual peers. I also taught a science class in which I had a heterogeneous mixture of students who were learning disabled, developmentally handicapped, gifted and talented, and "regular." I feel I did a satisfactory job trying to meet all their needs, but there were many times when my gifted students were bored and my learning disabled students were lost. It is extremely difficult for one teacher to meet the needs of all the students in such a diverse class. Some ways to meet the needs of all the students have been suggested, such as cooperative learning, but in reality these methods do not work either.

I understand the arguments against having a special class for the gifted students—that we are using the "tracks" to segregate students, that this is a way of making some students feel superior and others inferior, and that these students need to interact socially with "regular" students. One of the biggest misconceptions about separate classes for the gifted is that it leads to an educational elitism. James J. Gallagher answers some of the "problem areas" of equity and the issue of elitism in the following quote:

> *Educational programs for the gifted are not part of a plot for the elite to take over the world, but rather a desperate attempt on the part of parents and caring educators to try and create a better learning environment for these students. (p. 20)*

I honestly believe this statement to be true. Every student has the right to an appropriate education. Gifted students deserve this right as much as any other students in our schools. I think that people are afraid that when

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the gifted get appropriate services we will deny regular students services, so they cry out that it is an elitist idea. Again, I argue that it is a necessity that each student get an appropriate education. No one cries out that the learning disabled students are getting an elitist education, so why should they for the gifted? We in America seem to be infatuated with making everyone equal and middle class. We are so concerned about being non-elitist that we overlook the value in being different.

Gifted Education and the Middle School Movement

Another rationale for eliminating the gifted program has to do with the middle school philosophy. Many schools are now moving toward team teaching where there is a true heterogeneous mixture of students all day and no tracking of classes. One of the big selling points of the middle school concept is its striving for increased competence and success for all students. However, according to the literature, the definition of success is "becoming a competent learner." Most gifted students are already competent learners—they know what is expected at their grade level and have a good understanding of the education system and how to learn. If the whole push is toward competence, what should the gifted strive for? Tomlinson (1994) states a key role to gifted education is to advocate for instruction "which invites and encourages excellence at the level of performance of the gifted students rather than accepting definitions of success based on performance of the norm. To do less is to foster mediocrity for highly able students" (p. 177).

If we eliminate tracking of classes, take away special gifted programs for students, and try to assimilate every student into mainstream courses on grade level, we will be encouraging mediocrity for those students who are most capable.

Cooperative Learning and the Gifted

Even the well-liked and frequently used method of cooperative learning has taken hits from those in favor of the gifted education programs. Although cooperative learning has many benefits for all students, it is not the answer for the gifted. In many instances, when cooperative learning is used in its true form where the abilities of the students in the group are mixed, the gifted student ends up being the tutor. Some students enjoy this role, but after years of being the students who "saved" all the other students' grades, or being the one to do the most work, these students resent having to always help the others. Cooperative learning does greatly benefit these students in regard to developing social skills, working in teams, and cooperation, all vital skills for life. But, it does not achieve

intellectual goals for the gifted students (Tomlinson, 1994, p. 178). I have used a lot of group work in my honors classes, but I let the students choose their own groups, and I assign very unstructured, open-ended tasks. Normally, they choose groups of students with whom they want to work and who are of equal ability. Now they challenge themselves and strive for excellence, and the work they produce is phenomenal. So, I am not criticizing the use of cooperative learning as it does have many benefits. I do think we need to look at the position we put the gifted student in when we choose the groups in which the gifted becomes the tutor.

Another argument stems from the basic rights of all students that says all children are entitled to the equal opportunity of a free and appropriate education. The key words in this sentence are "appropriate education." We agree that our lower functioning students need special classes, even if it is on a pull-out basis, to build the skills they need for success. This is seen as appropriate for those students. It is also agreed that students with different abilities, backgrounds, and interests need different educational programs if they are to have equal educational opportunity (Green, 1993, p. 3). If we are to educate our gifted students, we need to ensure that they have the programs they need in order to be a success. Thomas Jefferson wrote, "There is nothing more unequal than the equal treatment of unequal people." We should not have the exact same programs for all of our students all day long for all of their school experience. When our gifted students are the future scientists, inventors, and political leaders of our country, we are doing our society a grave injustice by not encouraging them toward excellence.

Using the Same Practices

Many educators argue that the techniques used for the gifted are of value and are practical to use for all students. They say that every student could benefit from more "hands-on" activities, more freedom, open-ended questions, the teacher as the guide through the lessons rather than the leader, etc. I use many of the same methods for both my honors classes and my regular classes. However, emotional maturity seems to be the major difference. Although some of my regular students could handle the looseness of the class, the creativity, and the extra freedom, most could not. It was difficult for these students to remain on task in that the teacher was not guiding them through each step and monitoring their every move. Maker responds to the question, "What techniques appropriate for gifted students should not be used with or would not be appropriate for all students?" with the following answer:

1. Those that require abilities or skills not possessed by students, thus resulting in frustration and/or feelings of incompetence; and

2. Those that challenge the highest abilities when children have not yet had lower level needs such as belonging and self-esteem and competence met (p. 115).

In conclusion, many researchers and educators alike have found that in order to truly meet the education needs of the gifted they must have at least one gifted class in their program. Our gifted students are indeed exceptional children, according to a definition by Kirk, Gallagher, and Anastaslow, which states:

> *We define an exceptional child as a child who differs from the average or normal child in:*
>
> - *mental characteristics;*
> - *sensory abilities;*
> - *communication abilities;*
> - *behavior and emotional abilities; or*
> - *physical characteristics.*
>
> *These differences must occur to such an extent that the child requires a modification of school practices to develop his or her unique capabilities (p. 4).*

Just mainstreaming the gifted into regular classes all day is not enough to develop their unique characteristics. We must develop, teach, and fight for special programs aimed at developing one of our greatest natural resources, our gifted and talented youth. We must also work on improving all education for all students and work on ensuring each student an appropriate education.

I believe in the value of gifted education. I feel every student who is identified as gifted and talented has the right to some sort of program in the school designed for these students. Whether the program is a pull-out or a daily class, it is a necessity and a right for these students to have their appropriate program.

The last section of this paper is a unit I wrote and taught in my honors seventh grade English and reading classes. It is given as an example of how extensive, diverse, and independent a gifted unit can be. The entire unit described was completed as written and the final performance was a great success.

A Celebration of Me

"A Celebration of Me" is an integrated unit designed to allow the gifted learner the opportunity to explore many concepts in the fine arts, to see how each interrelates with language arts, and to examine the importance of

self-esteem. This unit was taught in a suburban area with children who were identified as gifted and talented or of "honors" caliber. The unit described here took place two periods of the day, during English and reading for a two-month period. Small subunits were taught during the time period until all the objectives had been met. Each subunit is described in detail. Some subunits were completed in one week, some took longer. The most important assignment during all the small subunits was the final project. Each student was to choose a final assignment to do which would encompass the areas we were to study during this major unit. The projects could be done individually or in groups, they could be performances, research, or projects, but they counted for half of each student's unit grade. Projects were to be approved by the teacher before major work was put into it. Class time was also allotted for students to meet to discuss problems and ideas. The final project was presented to the parents at a night performance of "A Celebration of Me."

Following are the subunits, objectives and descriptions for each.

Poetry Subunit

OBJECTIVES: The student will be able to:

1. write several forms of poetry;
2. analyze poem skeletons, forms;
3. write original poetry from a character's viewpoint;
4. read poetry, both original and selected poems; and
5. listen to a published poet and ask questions.

Students will learn a variety of poem skeletons and form poetry and will be asked to try writing each example. At the end of this unit each student will choose one poem that is the best example of his or her work. All poems will be put into a collection and illustrated by one student for his or her final project. This book will be passed out to the parents on program night. Examples of poems include: biopoems; inside, outside poems; newspaper poems; "I Will" poems; etc. Also, a published poet will speak to the classes about poetry and what it feels like to be published. The students' poetry throughout the unit will be evaluated. A poetry survey was administered at the beginning of the year and will also be given at the end of this unit. Survey results will be compared to evaluate if any change in appreciation has occurred.

Study the Island, *a novel by Gary Paulsen*

OBJECTIVES: The student will be able to:

1. read and analyze a novel;
2. recognize foreshadowing;
3. predict a resolution to the book;

4. write a different resolution;
5. relate personal experiences to those of the characters;
6. analyze characters and their actions; and
7. appreciate differences in personalities.

During this time the students will have daily reading assignments and questions to answer. Classroom discussions, reenactments, and favorite readings from the book will also take place. At the end of the book the students will choose four essay/projects to complete for a final grade. The writing assignments and observations (such as students using references to characters or actions in the book as we discuss other topics) will serve as the evaluation process.

Guidance Counselor to Speak to the Class

OBJECTIVES: The student will be able to:

1. define self-esteem and self-image;
2. express positive thoughts about someone in the class;
3. list positive traits about self;
4. use the wellness wheel to evaluate self;
5. know the different roles in the family and which one they play;
6. list some warning signs of alcohol abuse; and
7. know where to go for help.

Our guidance counselor will visit the class and discuss various teen issues with the students including peer pressure, self-esteem, and feeling good about accomplishments. A professional will also visit the class and discuss teen alcoholism and related problems. This unit also serves as a way of introducing the various guidance staff to the students for their personal use if needed. No formal evaluation of this unit will take place.

Art Submit

OBJECTIVES: The student will be able to:

1. recognize art as a way of expression;
2. evaluate pieces of art;
3. describe a piece of art so that someone else can identify it;
4. give a speech to the class about an artist he or she has researched;
5. write a story using a painting as a prompt;
6. know some characteristics of right brain-left brain theory and apply them to self;
7. visit the Cleveland Museum of Art; and
8. create a piece of art to express self.

During this unit the students will have two visits by the art teacher. She will discuss various issues of art appreciation and work on some issues from the book, *Drawing on the Right Side of the Brain*. Also the students will visit the library to research an artist of choice and give a small speech to the class. Various postcards with famous art are displayed around the room and serve as prompts for a writing assignment. Evaluation will be the results of the various writing assignments during this unit.

Music Subunit

OBJECTIVES: The student will be able to:

1. appreciate various forms of music;
2. write a story using music playing in the background as a prompt;
3. write a parody of a popular song and sing it;
4. explain in a composition the lyrics of a song that has meaning;
5. learn two songs to sing as a class; and
6. perform two songs at the performance.

During this unit the students will have the opportunity to discuss, write about, and listen to a variety of music. Each student will be asked to defend his or her music preference and respect others' choices.

The music teacher will visit the class to discuss music appreciation and all the various forms and uses of music.

She will also be responsible for teaching the class the two songs that they will perform on the night of the show.

Physical Education Subunit

OBJECTIVES: The student will be able to:

1. list sports suitable for lifetime fitness;
2. describe the importance of lifetime fitness;
3. create a new game that could be played in PE class;
4. write distinct rules and directions for the game;
5. direct the class in the playing of the game;
6. referee the game and handle any problems that result; and
7. evaluate the rules, purpose, and enjoyment of the game.

The physical education teacher will visit the class and discuss various forms of lifetime fitness.

She also will show a video from an Oprah Winfrey show that describes her battle with fitness and the importance of staying fit. In small groups, the class will create a new game to be played in the gym.

The students will be responsible for writing the game, including the purpose, skills needed, rules and violations; running the game; and evaluating the success of the game. The class will play the game and follow all rules and regulations.

Showcasing Talent

The conclusion to the unit is a student-run show entitled "A Celebration of Me" which showcases all the particular talents of the students in the class.

Students will choose an area they wish to focus on during the two-month unit. They may work individually, in pairs, or in groups to either build, research, or perform their talent. The show will have two sections: a viewing of the research or projects before the show and the actual show itself. The entire production will be directed by the students.

At the end of the year I asked my students to fill out questionnaires about the year. The most popular activity of the year was the "A Celebration of Me" project. The students felt they learned more about themselves, about their classmates, and about me during this time period. Each student was allowed to shine during this unit and we found out some very interesting things about the students themselves.

New friendships were made, new respect earned, and everyone's self-esteem rose the night of the show. The planning of the unit and coordinating of schedules was the most difficult part of the unit. I often taught a fine arts class so that teacher could come and teach my class.

I had a lot of organizing of materials and activities, and I had to have a lot of faith in my students. These were the hard parts of the unit. The most rewarding parts were watching the students take off and explore interests, watching them shine the night of the show.

Two students chose to be the masters of ceremonies for the show. They were responsible for organizing the entire production including making invitations and programs and welcoming guests. Students were assigned by the MC's to move equipment, set up the displays, and seat the guests. My job was to relax and enjoy. I also performed; I wrote a poem and dedicated it to my students that night. As a unit, this is the most involved and difficult I have ever taught. It was also the best and most rewarding unit I have ever taught. With gifted and talented students we need to constantly encourage them to go forward, reach for new heights and aspire to greatness.

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Untracking and Students' Futures

Closing the Gap Between Aspirations and Expectations

By Renée Smith-Maddox, Graduate School of Education and Information Studies, University of California, Los Angeles and Anne Wheelock, Author and Consultant

As adolescents develop, attend school, and embark on careers, such school practices as tracking continue to undermine their aspirations for future success.[1] Since the 1920s most schools enrolling adolescents have offered a "tracked" curriculum—a sequence of academic classes that range from slow-paced remedial courses to rigorous academic ones and an array of electives or exploratory classes in the arts, vocational subjects, and physical education. Tracking also involves the sorting of students into homogeneous groups according to their past academic achievement and presumed educational needs.[2]

Although tracking, like other school practices, is intended to prepare students for the work force or for higher education, the consensus of business and academe is that they must select from a pool of ill-prepared candidates. These perceptions suggest that many students are not afforded the opportunity to acquire the education or skills early in their school careers that are needed to make them employable, particularly in high-wage jobs.[3]

The pressure to eliminate tracking emanates from many studies that have shown that the practice has negative consequences for the future educational opportunities and schooling outcomes of many children. These negative consequences disproportionately affect low-income, African American and Latino children.[4] Ability grouping and the differential distribution of expectations that accompanies the practice are key elements in locking students out of meaningful opportunities for future success.

As students enter early adolescence, they often express high aspirations for the future. The National Educational Longitudinal Survey of 1988 (NELS:88) provides important information about the hopes of middle-graders:

- 29% of all eighth-graders aspire to careers in professional, business or managerial occupations;
- although 55% of Hispanics expect to finish college or obtain a graduate or professional degree, only 23% plan to enroll in a college-preparatory program in high school; 64% of African

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American eighth-graders expect to finish college or obtain a graduate or professional degree, but only 25% plan to enroll in a college-prep program; and

- 64% of eighth-graders have never discussed their future high school program with a counselor, while only half of all eighth-graders have discussed their high school plans with a teacher.

These data clearly demonstrate the disparity between students' aspirations and the chances of their realizing them.

In part, the gap between student aspirations and school expectations is exacerbated by the failure of many schools to provide all students with access to guidance to help them understand the steps necessary to realize their ambitions. This failure dramatically affects how students understand their life chances. For example, according to NELS: 88, eighth-graders are far more likely to discuss their high school plans with their mothers (52%) than with their fathers (31%), their teachers (8%), or their counselors (6%). Similarly, the College Entrance Examination Board reports that vital postsecondary counseling resources are not equally distributed among all students. For example, the College Board reports that middle-level students from low-income families (rural as well as urban) are less likely than their more advantaged peers to have access to appropriate guidance for course selection in high school and that the less access to counseling students have, the more likely they are to be placed in nonacademic curricular tracks.

In creating a culture of detracking, closing the gap between student aspirations and school expectations must be a significant goal. School communities that are untracking themselves tend to restructure their thinking by moving beyond a focus on programs and classroom strategies and seeking to honor all students' educational and occupational aspirations. To ensure that all students learn at grade level, these schools provide equal access to valued knowledge and additional support to students who need it. These schools also find ways to use counseling and guidance resources to build on students' aspirations and thereby to sustain their commitment to achieve in high level heterogeneous classes.

Below we describe some innovative strategies implemented by untracked schools to help close the gap between student aspirations and school expectations. We do so in the hope that our work can serve as a catalyst for discussion and reflection on the part of educators, parents, and policy makers who wish to become aware of ways to serve all children well.

Access to Positive Classroom Experiences

Many studies have found a disproportionate percentage of low-income and minority students (mostly African Americans and Latinos) in curricula designed for low-ability and non-college-bound students.[5] In addition, a

number of researchers have argued that students placed in low-track classes do not have opportunities for individualized instruction, are not exposed to people and points of view different from their own and experience primarily rote learning rather than the critical-thinking curriculum offered their peers in high-ability classes.[6] Bored with the repetitious and meaningless nature of such learning, students with the weakest basic skills who are placed in the low tracks are those most vulnerable to dropping out of school.[7] Clearly, the low expectations for students placed in low-ability groups, coupled with watered-down curriculum and instruction, militate against student aspirations.

Jeannie Oakes examined the effects of tracking on several dimensions of classroom processes, including student attitudes toward school and toward themselves.[8] She found that students in higher-track classes had significantly more positive attitudes about themselves and significantly higher educational aspirations than students in lower-track classes. Low-track students were more likely than other students to view themselves as not as well-liked by other people and as having many things about themselves that they would like to change.These feelings, in turn, foster significant differences in classroom climate, and more people are questioning the fairness and morality of the practice.

How Untracking Schools Build on Student Aspirations

Three principles guide all efforts to untrack schools. First, untracking schools seek ways to reduce the isolation of student groups from one another. Students are not separated according to their perceived ability. Students with disabilities are not separated from their agemates.

Second, untracking schools seek to expand access to valued knowledge to all students. They act to open the gates of opportunity rather than to sort students according to perceived notions of students' futures. They assume that the best way to ensure equal access to valued knowledge is to group students in heterogeneous classes with curriculum and instruction that foster higher-order thinking.

Third, untracking schools extend high expectations to all students by showing them how to succeed and by providing them with the necessary information and support structures to do so They also act to make students' high aspirations a reality by assuming that some kind of post-secondary education will be essential to students' futures at some point in their lives and they act on that assumption by ensuring that opportunities for further education are not foreclosed to any student.

A set of technical tools at both the school and classroom levels are critical to turning these guiding principles into real learning opportunities for students. These tools include professional development to help teachers learn strategies for communicating high expectations in classroom interactions with students, schoolwide development approaches pioneered

by such school reform movements as the Coalition of Essential Schools, and professional development to help teachers adapt specific approaches in curriculum and instruction for heterogeneous groups.

The last item includes activities to develop thinking and inquiry skills through the use of such tools as cooperative learning and complex instruction, interdisciplinary thematic units, hands-on activities, and computer-assisted instruction. Such approaches to teaching and learning are designed to raise the floor and raise the ceiling of student achievement and to support access by all students to a curriculum that represents greater opportunity for future success.[9] Schools that untrack also offer students extra support so that they can not only survive but thrive in rigorous heterogeneous settings.

In addition, such schools must mobilize support for students by implementing innovative approaches to guidance counseling, a resource often overlooked in reports on school reform.[10] In tracked schools, guidance counselors have often been part of the problem, working to steer students into courses deemed "suited" to their abilities. In schools that are untracking, however, guidance counselors tap into students' own aspirations, individualize support to help students realize their own goals, and boost students' motivation to succeed in challenging courses Even in schools with limited guidance resources, administrators and teachers can assume new roles and perform these functions.

The Role of School Counselors

As a preschooler, Charlayne Hunter-Gault, now a prominent journalist best known for her work on the "MacNeil/Lehrer NewsHour," spent time around her grandmother, who was a news junkie who read three newspapers a day. Later, she idolized a comic strip role model, crack reporter Brenda Starr. But when Hunter-Gault told her high school guidance counselor that she wanted to become a journalist, the counselor told her that she was being impractical. Although the counselor didn't say it in so many words, Hunter-Gault knew that she was thinking, "Journalism is a white man's profession; even your precious Brenda Starr is an exception."[11]

Counselors in tracked schools often play the role of gatekeeper to information about postsecondary and occupational opportunities. The advice they give students about course placement at specific levels makes concrete their assessment of the students' potential to realize their dreams. Indeed, their advice can foreclose opportunity for many students. In contrast, counselors in untracking schools work not to restrict opportunity, but to teach students and their parents the knowledge and skills necessary to negotiate the pitfalls of the opportunity structure. In schools that are untracking, counselors, like teachers, focus on helping students develop the knowledge to take advantage of future opportunities.

As schools design alternatives to tracking so that all students have access to the challenging courses that open doors for future educational opportunity, counselors play a key role by supporting success in heterogeneous groups, by communicating high expectations, and by stimulating students to take steps to turn their dreams into reality. A strong counseling program that ensures that all students will make specific connections between their personal goals and their high school plans sustains untracking efforts by bolstering student motivation for pursuing challenging coursework. Such a program can provide students, especially those who might have been relegated to lower levels in a tracked school, with a reason to keep working in courses that lead to post-secondary education.

Coaching Students To Meet Higher Expectations

Dona Cadwell, a counselor at Pioneer Valley Regional School, a secondary school in Northfield, Mass., knows well how the school's former tracking practices closed students out of opportunities that might have appealed to their interests She remembers the experience.

> *Being responsible for placing students in different levels in grades seven through nine felt extremely uncomfortable. It was like playing God, with so many unknowns, unopened minds, unexplored options, and lack of knowledge of the world. The kids usually trusted us. Parents wanted the best, even if students were not recommended for the high levels, and students would be made to feel inferior if they couldn't handle the work in the particular group. Often the difference in work was amount rather than difficulty. The very act of labeling was repulsive.*[12]

Likewise, when Phyllis Hart, executive director of the California Achievement Council, was a counselor at Banning High School in Los Angeles, she was shocked at the number of students who were left out of the challenging courses that could help them climb out of poverty. She was further dismayed to learn that even students who graduated from the school and went on to enroll in college had a hard time keeping up with the work. Hart concluded that enrollment in college prep courses was essential for all students and that counseling could make or break that opportunity for the most vulnerable ones. Her role at Banning included supporting teachers, especially those unaccustomed to the presence of "nontraditional" students in their classes. She coached, badgered, and cajoled the students into keeping their dreams alive, and she organized opportunities to reward students for working hard, seeking help, taking college entrance

examinations, and enrolling in courses that would give them access to higher education.

Like Cadwell and Hart, counselors in untracking schools find that their role often involves helping students understand and cope with higher expectations than they have ever experienced. They find that linking these expectations to the students' own goals and providing information and support to reinforce these goals can often be the key to success. For example, over the years since 1985, when Pioneer Valley Regional School eliminated tracking, Cadwell has developed a set of specific guidelines for making counseling work to support the school's commitment to expanding opportunities for all students. She recommends:

- expecting that every eighth-grader will eventually go to college;
- providing students with information about people with skills and interests similar to their own who have gone on to college and ended up in interesting occupations;
- reiterating college admissions requirements in every grade;
- asking questions that communicate the expectation that students will consider college, such as "Which language did you choose?" or "Are you ready for algebra now?"
- telling students about how particular graduates' high school experiences contributed to their postsecondary success;
- bringing in resource people who can inspire students and relay information about occupations and their educational requirements;
- working with teachers on career-investigation projects;
- introducing students to career guidance resources;
- sharing newspaper clippings about successful people and how they reached their goals;
- holding college video screenings in empty classrooms during study halls or lending videos to students to take home; and
- running workshops for parents to inform them about options and opportunities for their children.

Cadwell points out that counseling in an untracked setting naturally honors students' ambitions and plans for the future. "Now some decisions need to be made regarding math and science choices" she says. "Still, many students choose more difficult courses and feel confident or ready to take a

risk." In fact, the proof is in the pudding. At Pioneer Valley, 80% of the students—double the rate recorded in 1982 —now go on to postsecondary education. And, says Cadwell, once there, "most succeed."

Phyllis Hart affirms this perspective. From her point of view, counseling—especially in high-poverty schools—must be defined in terms of furthering students' *academic* needs and goals. Her conversations with students inevitably begin with a focus on what graduating students should know in order to gain access to further educational opportunities. Then she and the student work backwards together, figuring out how to get to that point.

Counseling for All

Turning student aspirations into reality requires that concrete plans be made during the middle years for execution during the high school years. Yet most young adolescents leave eighth grade with hardly a notion about how their choices of high school courses will influence their future plans. Many do not know how to take vague fantasies of who they might become in adulthood and shape them into various occupational options. Many do not know the specific educational prerequisites for realizing their ambitions.

At Crete-Monee Junior High School in Crete, Ill., an innovative counseling program emphasizes that the middle years are not too soon to teach students to plan for the future. In fact, Crete-Monee stipulates that students must leave the school with a written four-year plan to guide their high school careers, and they begin the design of this plan in the seventh grade.

Guidance and planning for students' futures at Crete-Monee, however, do not take place in traditional one-to-one counseling sessions. Instead, future planning is a regular classroom-based course, with teachers and students following a curriculum developed by counselors Ronald Allen and Debbie Hart along with other guidance staff members from the school district. The curriculum—"Pathways to Success: Individualized Educational and Career Plan"—requires students to survey strengths, weaknesses, values, interests, and abilities. A series of experiential activities helps students to develop a base of information about themselves, about occupations, and about postsecondary education The overriding objective of the program is to help students coordinate their academic coursework with their career goals.

Students and their parents first learn about the program when they visit Crete-Monee during the spring of sixth grade. In seventh grade, students explore their interests through exercises that help them describe their personality traits, consider their interests, and identify how they spend their time. Students also assess their work habits and link each course that they take to occupational possibilities that they think they might like to pursue. Each exercise aims to broaden rather than narrow students' thinking about the possibilities the future might hold.

In the eighth grade, learning activities become more focused on gathering information about future opportunities: identifying questions to ask, locating sources of new information, and becoming familiar with interviewing techniques. Students learn to research basic information about occupations—salaries, benefits, and educational requirements—and also to consider this information in terms of personal goals and the development of an understanding about how different occupations affect lifestyle, self-development, and family life. Activities deepen students' awareness of how personality traits, values, and interests are linked to specific occupations These activities provide a basis for using a computerized career-assessment and planning program to pinpoint occupations related to the students' preferences. Interviews with individuals from various occupations further expose students to the realities of the world of work.

Finally, students team specific decision-making strategies that link what they have learned about themselves and various occupations with their high school course plans. During the second semester of eighth grade, students develop a four-year plan for high school. In the process of discussing high school registration requirements, students learn about graduation requirements, course levels, and the consequences of weighted grades. Teachers pay explicit attention to the importance of course sequences and review the skills necessary for success after the completion of schooling.

In short, Crete-Monee's approach to students' educational futures leaves nothing to chance. "At our school, it's not an option *not* to plan," report Allen and Hart. "We tell the students what their choices mean. If they set their sights low, we tell them the consequences." Moreover, because career planning is fully integrated into the school's program, essential knowledge and skill-building are accessible to every single student, not just to those whose particular "gifts" or "deficits" demand guidance. Furthermore, the program stresses that students will inevitably be lifelong learners. The message of all activities is that, given a rapidly changing occupational landscape, having the skills and information necessary for planning for the future is more critical than making a career decision.

Perhaps most important, the design of the approach means that no student can leave the eighth grade without knowing that postsecondary training, whether though on-the job training, apprenticeships, trade school, community college, or four-year college, is critical to future opportunity. "Keep your options open!" counselors emphasize. At Crete-Monee, this message is getting through to an increasing number of graduating eighth-graders. The number of 1991 graduates entering low-level English courses in the ninth grade dropped by more than half compared to the 1988 figures, making the possibility of students' dreams coming true ever more real to greater numbers of students.

Turning Parents' High Hopes Into Practical Support

If the middle years are not too early to support students' efforts to connect their aspirations to their future plans, they also represent the ideal point at which to inform parents about future opportunities for their children. In this respect, middle-income parents are often more knowledgeable than low-income parents about which courses reflect high aspirations and meaningful opportunities, and they see to it that their children enroll in them.[13] For this reason, engaging poor parents in the process of planning for their children's future is a critical step in expanding opportunities for all students to realize their ambitions.

Most parents want their children to succeed in school and are eager for suggestions from school staff members on ways to improve their children's learning. Low-income parents in particular want schools to advise them on how to provide homework assistance and on what their children are expected to learn each year. A large majority of low-income parents choose How to Help My Child Develop His/Her Special Talents as their most desired topic on a list of potential workshops.[14]

Recent research also reminds us that, while the influence of role models outside the family is increasing during the middle grades, young adolescents continue to look to their parents as primary sources of advice and guidance.[15] For example, the majority of girls, when asked to name he adult who has the most influence on their lives, cite their mother.[16] In addition, analysis of a national data base of eighth-graders indicates that parents have a significant impact on students remaining in school until graduation. This effect strongly suggests that schools that encourage parents of middle-schoolers to participate in the education of their children—by discussing future education plans, limiting television time, and stressing the importance of maintaining minimum gradepoint averages—will improve the schools' holding power. This is especially true for low-income students.[17]

The desire to see their children succeed, coupled with the bond they have with their young adolescent children, puts parents in a critical position to nurture and support academic performance in heterogeneous classes. However, like their children, parents need access to information and support if they are to help students link their aspirations to future opportunities. The actions of school counselors in schools that are untracking can provide that access.

One tool to aid counselors in reaching out to parents who might not otherwise have information about the importance of high school course selection and opportunities to pursue postsecondary education is the Parents and Counselors Together (PACT) program, created by the National Association of College Admissions Counselors. Based on an awareness that many low-income parents, in particular, do not have access to current

information about postsecondary educational opportunities, including financial assistance, PACT is a four-part curriculum designed to provide parents with information that will help them support their children in pursuing their goals.

PACT's four modules are designed to promote effective study habits, to direct students toward a challenging high school program, and to inform parents about college and financial aid choices and opportunities. For example, the first module— Building a Foundation for Educational Success —helps parents understand the parent support ladder. Steps on this ladder include encouraging positive work habits, emphasizing the importance of school, appreciating and reinforcing effort, encouraging extracurricular and out-of-school activities, recognizing school as work, and presenting education as a lifelong process. These values are highly consistent with those of untracking schools, and, as parents reinforce them, they contribute to the success of heterogeneous groupings.

The second module— "Charting a Challenging High School Experience"— describes the connection between particular courses of study in high school, postsecondary education, and specific occupational opportunities. It emphasizes that many students do not pursue a challenging course of study and consequently come up short of the requirements for entry into the occupation of their dreams. Parents are encouraged to think about all facets of their children's development and to compare the profiles of their children that they construct with those constructed by a counselor, a teacher, or the children themselves.

The final two modules emphasize "The Road to College" and focus on preparing and paying for postsecondary education. Parents learn how to gather information about colleges, how to help their children through the testing and application maze, and how to explore resources for financial assistance.

In short, the PACT curriculum fills in information gaps that hamper the efforts of many parents whose children will be the first generation to attend college and who are unfamiliar with the steps needed to advance their children's aspirations. As parents learn the necessary skills to make their home a "learning center," they create a setting to facilitate student success in learning high-level content. Just as important, the curriculum counters misunderstanding about the availability of postsecondary educational opportunities and the misperception that you have to be "really smart" or "really rich" to go to college. By expanding the information that parents receive and by linking parents to specific resources, the PACT program opens doors to opportunity for parents and students and reinforces the overall goals of heterogeneously grouped schools.

Academic Support, Counseling, And College-Prep Courses

Many disadvantaged students, particularly in high-poverty school districts, are not aware that the courses they take in high school are critical to the opportunities they will have in the future. Consequently, leaving middle school with high aspirations, many unwittingly find themselves in courses that do not lead to the goals they have set for themselves. Schools that have become aware of this predicament work to develop a set of supports that allow students to reverse this situation. They also offer meaningful support services to students so that, once enrolled in college-prep courses, they can succeed.

One outstanding example of this strategy is a program called Achieving Via Individual Determination (AVID), which provides support for "underachievers" in the San Diego County Public Schools. In response to the underrepresentation of African American and Latino students in high-level courses in San Diego County high schools, the district developed a strategy to place students who would probably otherwise enroll in courses at lower academic levels in the most rigorous courses offered by the school. But rather than leave them to face new challenges on their own, the district also offers them a comprehensive system of support services so that they can succeed in the new settings.

AVID was developed initially by English teacher Mary Catherine Swanson, who set out to prove that the disengaged students in her ninth-grade classes, many of whom had difficulty speaking English, could boost academic performance and go to college. Pushing her school to place these students in classes for their "gifted" peers, she turned the high-track classes into heterogeneous classes without sacrificing challenging curriculum. At the same time, she recognized that, if low-achieving students were placed in rigorous courses without effective social and academic support systems, the heterogeneous grouping would backfire, and the skeptics would see that such an experiment never happened again. Thus AVID makes sure that the 5,500 students in the 100 county schools where the program operates are not left stranded.

At the core of AVID's program is a commitment to helping students develop the skills that will allow them to pursue educational opportunities successfully into their postsecondary years. While students enroll in courses at the highest levels, they are also provided with intensive support services that focus on study skills, tutoring, and motivational activities. For example, one critical aspect of the program is a series of workshops on study skills, including the Cornell notetaking system. Students learn to take notes, ask questions, and express their thoughts. Using writing as the primary tool for learning, students use binders and record-keeping forms to document their experiences, recounting their difficulties with particular academic assignments or projects.

In addition, students are clustered into study groups, urged to help one another clarify questions about assignments, and explicitly instructed in help-seeking behavior. These study groups are facilitated by college tutors—many of them AVID graduates—who serve as role models, coaches, and motivators for students. "We intentionally cultivate students' ability to work together in groups," says AVID teacher Kathy Deering. "We want our students not only to be eligible for and enrolled in postsecondary education but also to be successful in postsecondary education." The goal of keeping students in college once they get there is especially meaningful in California, where the average job now requires 13.6 years of education.

At each AVID school a lead teacher oversees a team of school counselors and teachers from every academic discipline. Teams attend a weeklong professional development institute during the summer, where veteran AVID teachers present workshops on effective teaching methodologies. Counselors are fully integrated into the team. To make the program work, the counselors must schedule students into college-prep courses, facilitate preparation for college entrance exams, arrange for field trips to colleges, and assist in the processes of applying for admission and financial aid.

AVID represents a big change for many students in the program, who enter high school with little experience in challenging courses. Years of remedial coursework and low expectations often mean that students can scarcely imagine academic success. Says one, "At first I was scared. I thought I couldn't make it. I learned it's all a matter of studying and believing in yourself." Adds Deering, "AVID is truly a vehicle that actualizes students' potential in ways that, a few years ago, they might never have dreamed of."

The results of the program are testimony to a strategy of combining access to meaningful knowledge with intensive, group-centered support, tutoring, and motivational activities. From 1986 to 1990, the dropout rate in AVID schools declined by 57%; at the same time, 98.8% of AVID graduates had enrolled in college. In 1991 senior classes at AVID sites completed four-year college entrance requirements at a rate 140% higher than the statewide rate.

The Case for Guidance and Support Services

Counseling and support services have a critical part to play in making sure that the most vulnerable students succeed in untracking schools. This is especially true at the middle level, when the decisions students make about their high school course of study are pivotal. Guidance and support are equally valuable at the high school level in schools that are dedicated to helping students gain equal access to valued knowledge so that they will be able to realize their personal goals. Indeed, without guidance and support, students may find themselves excluded from settings where valued

knowledge is pursued. Then they will be more likely to lose their motivation to attend school, and they may give up on their dreams altogether.

As key players in untracking schools, counselors and teachers assume a variety of nontraditional roles. They must be coaches for students who feel ambivalent about their commitment to higher-level courses. In the best cases, they set out explicitly to help students and their parents find their way through an opportunity structure that may be unfamiliar to them. The counselors also work to ensure that the guidance, the support, and the skills in decision making and planning that students need for success are available to all. They further act as a link between school and home in their efforts to mobilize parental support for children's success. Finally, they may help put students in contact with a comprehensive network of services so that they can beat the odds and succeed in high-level classes.

In untracking schools, however, what is critical is that responsibilities for counseling and support are diffused throughout the school. This may occur through such approaches as teacher-based guidance, as at Crete-Monee Junior High School, or through the presence of an interdisciplinary teacher/counselor team that is explicitly charged with ensuring success for all students in challenging heterogeneous classes. Aggressive outreach efforts that teach parents the skills and knowledge to help support their children's aspirations further expand a culture of success into the community.

For many students in heterogeneous groups, access to valued knowledge is not enough to guarantee success. Many students continue to need coherent guidance counseling as well as support services designed to ensure that they will succeed in mixed-ability classes. In untracking schools, such guidance and support services are keys to sustaining students' beliefs in themselves and their commitment to their aspirations in the face of new challenges. Placement in courses that offer expanded opportunity is fundamental, but support for success in those courses may mean the difference between hopes dashed and dreams realized.

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Promoting Gifted Behavior In An Untracked Middle School Setting

By Thomas O. Erb, Stephen O. Gibson, and Suzanne E. Aubin

For most of this century educators have attempted to meet the needs of diverse learners by separating students into different academic classes based on what appeared to be ability. Students learned at different rates, and some students learned more than others. By the time students entered junior high, some were functioning on the 11th-grade level while others languished at the third-grade level. All the variance appeared to result from an inherent, unchangeable characteristic of youngsters—intelligence. And intelligence appeared to be the best predictor of students' ability to achieve in school. The system seemed to be working fairly well.

However, over the years a body of research appeared that demonstrated that the intended outcomes of across-class ability grouping and tracking seldom were realized. Students in tracked classes did not tend to do better academically and students in the lowest tracks clearly did more poorly than those students in heterogeneously grouped classes (Slavin 1990). Neither did student self-esteem tend to be better in tracked classes than in untracked ones. The very students who were supposed to benefit from being placed in "remedial," "slow," and "basic" classes received a dumbed-down curriculum and were taught by the least-experienced teachers, with the least-successful teaching strategies, and in the worst learning environments (Goodlad 1984; Oakes 1985; Wheelock 1992).

Others who studied human intelligence and learning suggested that "ability" was only one factor that affected achievement. Learning styles and self-concept may have more to do with how a student learns than does ability. Sternberg (1990) has argued that thinking and learning styles are every bit as important as ability in explaining student learning. Beane and Lipka (1987) and March, Byrne, and Shavelson (1992) have documented that youngsters' self-concepts as learners have a more powerful impact on student achievement than does ability. The practice of grouping students by ability to reduce heterogeneity in classrooms is being increasingly criticized.

Another line of attack also has challenged the notion that what you see is what you get when it comes to ability. Sternberg and Davidson (1985) believe that the importance of IQ in predicting success in the classroom is overestimated, because studies of intelligence virtually never control for

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the correlates of IQ. For example, measures of IQ correlate very highly with socioeconomic status (Humphreys 1985). Baldwin (1987), who decries the under-representation of minority youth among the high scorers on tests of IQ, has confirmed the overlap between ethnic background and measures of intelligence.

At this time it seems that, unless one deliberately wants to keep America's classrooms segregated by class and ethnicity, there is no defense for the practice of across-class ability grouping or tracking. Even if one wanted to create homogeneous environments for learning, the task is impossible. Certainly, in middle-grades classrooms where teachers encounter perpetual pubertal metamorphoses, a homogeneous classroom is an oxymoron.

So what are educators to do? Children are different from each other. It does not make sense to put together a heterogeneous group of young adolescents and teach them all in the same way. In successful heterogeneous classrooms all students do not get the same treatment, though they are exposed to the same basic curriculum. There are a whole host of teaching practices that have emerged to allow different learners to encounter appropriate learning activities in a classroom of diversity: interdisciplinary thematic teaching, cooperative group investigation, authentic assessment, independent-study contracts, and class-within-a-class, to name a few. But what about those students who really want to get beyond the basic curriculum and delve deeply into the study of some topic or issue? Even the highly motivated, creative, and intelligent—some might call them "gifted"—students can have their unique learning needs met in an otherwise heterogeneously grouped middle school.

Unlike the traditional notions of "giftedness" that are linked to high scores on IQ tests, there are newer conceptions of giftedness that are developmental in nature. Rather than focus on some measure of general intelligence, developmental views suggest that giftedness is as varied as the fields in which human beings pursue excellence (Feldman 1979). In other words, there are many ways to display gifted behavior. Not only would one have to look in many places to find gifted performance, but gifted performance itself is multifaceted. One of the most highly developed conceptions of giftedness was proposed by Renzulli (1978, 1986), who viewed giftedness as being composed not only of above-average (but not necessarily superior) intelligence, but also creativity and task commitment. Renzulli goes on to suggest that these three components of giftedness can be applied to 11 general performance areas (such as mathematics, visual arts, life science, and music) and scores of specific performance areas (such as cartooning, biography, poetry, fashion design, navigation, wildlife management, film criticism, and child care).

To get students involved in appropriate learning activities using Renzulli's model, one does not administer an IQ test or ask for teacher recommendations to put a child into a special class to be treated differently.

Instead, students are guided into appropriate learning experiences based on information from a variety of sources collected over an extended period of time. Students are invited to participate in three types of learning activities, the first two of which are open and appropriate for all learners. Renzulli's (1977) Type I activities are called "General Exploratory" (see also Reis and Renzulli 1985; Renzulli and Reis, 1985). These are learning activities designed to bring learners into touch with the kinds of topics or areas of study that they may have an interest in pursuing. These might include field trips, guest speakers, interviews, publications, videos, or artistic performances. The Type II activities are referred to as "Group Training" and consist of methods, materials, and instructional techniques that are mainly focused on the development of thinking and feeling processes.

The Type III activities are the in-depth projects that Renzulli calls "Individual and Small-Group Investigations of Real Problems." At this stage, students become investigators of real-world problems and employ the methods of inquiry appropriate for a professional in a given field of study. These projects require a great deal of independence and perseverance. These requirements distinguish Type III work from the independent-study projects that less committed students might undertake.

Getting appropriate students engaged in these Type III activities requires the collection of inforrnation about student performance that is acquired over time. The first-level identification requires four types of data:

1. *Psychometric Information* from traditional tests of intelligence, aptitude, achievement, and creativity;

2. *Developmental Information* from teacher, parent, and self-nomination and rating scales;

3. *Sociometric Information* from peer nominations and ratings; and

4. *Performance Information* from examples of previous accomplishments in school and non-school settings (Reis and Renzulli 1986, p. 276).

A second-level identification consists of collecting "action information" that is based on student performance in Type I and Type II activities. This action information grows out of the interests of children, rather than being based on some standardized measure. Though this process of meeting the needs of students may seem to be complicated, it really meshes well with the curriculum.

This Renzulli system has been working well for several years in Howard County, Md. In the Howard County middle schools, students are grouped into disciplinary teams. It is in these teams that the Howard County

students engage in the three types of activities that Renzulli has proposed. For this chapter, we focus specifically on Patapsco Middle School, which has undergone a successful transition allowing all students to exhibit "gifted behavior."

Patapsco Middle School is located in a suburban community consisting of a wide range of socioeconomic classes. For several years the school followed the practice of grouping students for instruction on the basis of "ability." Little regard was paid to other factors that affect student performance. The school was ripe for change. About 15 years ago, Patapsco, along with most junior high schools in the district, made the sweeping change from junior highs to middle schools in both name and practice. This radical change brought a structure that departed from a departmental, discipline-centered organization to one based on interdisciplinary teams, allowing a more student-focused environment to be created.

Not long after this change in organizational structure, the county found itself in a population boom. The county and the school system were growing at such a rate that the building of schools could barely keep pace with the overall growth. With this tremendous influx of new students came increasing pressure from parents of so-called gifted students to establish a separate magnet middle school for the "Gifted and Talented." After a long battle, the school system rejected the magnet proposal and adopted the "Triad Model" (Renzulli 1977), somewhat modified to incorporate "talent-pool" classes in English, science, social studies, and math. Although talent-pool classes were created to permit acceleration or enrichment of the curriculum for students who met the entrance criteria, these classes did not become an excuse for denying other students opportunities to display gifted performance.

How does this program allow for "addressing giftedness in an untracked middle school setting"? As a result of the varied facets of the Renzulli model, more students than ever before at Patapsco Middle School have been given the opportunity to explore, investigate, and realize that they can truly display gifted behavior. Patapsco students at all grades are given the opportunity to engage in Type I activities as described earlier. It is wonderful to see the delight of youngsters as they engage in activities with people ranging from snakehandlers to museum curators, from artists to skydivers, from computer programmers to storytellers. Students are able to interact with the presenters in a number of different ways. At times that may mean a question-and-answer period or an opportunity to use a special piece of equipment.

Last school year during a Type I presentation, the vocal music teacher had the unique opportunity to play a musical instrument called a video harp. At the time, this video harp was one of only seven such instruments in the world. Although the opportunity to play this instrument did not lead to the purchase of a video harp, it did turn on a light bulb in that teacher's head. He believed he could greatly enhance the school's music curriculum

by the purchase of a computer and a media system that would allow students considerable freedom and creativity to compose original music. Students of all academic abilities were then able to write original music scores. Born out of one of these Type I activities, students and their teacher have been given the opportunity to display truly gifted behavior in the fine arts. In the old traditional structure for addressing gifted behavior, it is likely that only students who were perceived as having high ability in music would have been exposed to this activity. Under the Triad Model, students of all abilities are exposed to a wide range of activities.

Type II activities can be integrated into every content area in the middle school. All students possess intellectual strengths, and Type II projects are designed to stimulate creative thinking, research, communication, and critical skills. In essence, these types of activities are designed to teach students the skills and habits necessary to engage successfully in independent inquiry. For example, after the entire class read Jean George's novel, *My Side of the Mountain*, students were able to choose among a wide range of projects, such as diary entries, models, and scrapbooks created to portray a character's experiences. Because extensive reading experiences are necessary to enhance an individual's reading skills, students also were required to do outside reading daily and to respond to creative, divergent questions using a journal or reader's response log.

Given the opportunity to perform, all students—not just those students who are labeled "gifted and talented"—possess insights and ideas. Type II activities permit students to tap their strengths and apply them in different ways. This allows all students to have opportunities to develop as active learners.

Although Type I and Type II activities extend gifted-behavior opportunities to all students, it is through Type III activities that we begin to see students of all levels of perceived academic ability display truly gifted behaviors. As noted earlier, Type III activities are those in which individual students or small groups engage in investigation of real-world problems. Students who are excited about a specific topic or subject are encouraged to report to the gifted-and-talented resource room where they are asked to fill out a "light-bulb" form. After completing this form, a six-step module is set into place:

1. Introduction to the Enrichment Triad Model.
2. Development of a Knowledge Base.
3. Problem Finding and Focusing.
4. Determination of a Product/Audience.
5. Research and Data Collection.
6. Production.

These six steps allow students to become deeply involved in their chosen topics and force students to become creative and critical thinkers, which in and of itself is a fairly good definition of gifted behavior.

Students at Patapsco have used this format to create a wide variety of products and services under the umbrella of the Triad Model. It would be impossible to list many of the Type III projects, but here are a few of the projects that students have developed over the last two years:

1. *Soup to Nuts:* A local restaurant guide was designed to offer parents choices of places to dine out with their children.

2. *New Student Survival Guide:* A booklet was designed by students who were new to school with the purpose of aiding future new students.

3. *Memory Book:* This completely student-driven publication recorded the events and pictures of the eighth-grade class.

4. *Bike Helmet Law:* Following the death of a fellow classmate, a group of students at Glenwood Middle School, another Howard County middle school, lobbied successfully to have the nation's first Bike Helmet Law enacted.

5. *Piffer School House:* An old, abandoned, one-room schoolhouse was saved from demolition because of the efforts of several students, who researched the history of this structure and garnered enough support and capital to have the schoolhouse moved to another location, thus preserving it for future generations.

6. *Patapsco Middle School Directory:* A computer-generated school directory was created on the HyperCard program. The directory includes pictures of staff members, layout of the school building, and complete teacher schedules.

These projects are just a sample of the wonderful things that all kinds of students can accomplish when there is a program in place to allow gifted behavior on a wide variety of subjects.

Students of varying abilities can demonstrate gifted behavior, because gifted performance is only partially dependent on ability. Other traditionally overlooked factors contribute to academic success: self-confidence, learning style, motivation, and student priorities. Not only does gifted performance depend on a lot more than ability, but the concept of ability is much more domain-specific than is acknowledged in traditional conceptions of giftedness.

Instead of only one way to be gifted, there are many ways. Some students may progress to Type III activities only once in the three years they spend in middle school. Others may engage in such activities on an almost continual basis. However, no child is denied the opportunity to produce gifted performance because of rigid tracking practices. All students can pursue self-selected parts of the curriculum as far as their talents, priorities, interests, learning styles, and motivation will allow them. Patapsco Middle School is living proof.

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